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## Journal of the Society of Arts.

FRIDAY, FEBRUARY 12, 1869.

### Announcements by the Council.

#### ORDINARY MEETINGS.

Wednesday Evenings at eight o'clock :—

FEBRUARY 17.—“On the Efficiency and Economy of a National Army in Connection with the Industry and Education of the People.” By HENRY COLE, Esq., C.B. On this evening the Right Hon. T. MILNER GIBSON will take the chair. If necessary, the discussion will be continued on the following Friday morning, the 19th instant, at 11 a.m.

FEBRUARY 24. — “On Ventilation.” By EDWARD SMITH, Esq., M.D., F.R.S.

MARCH 3.—“On the Adaptation and Extension of Present Means for the Promotion of Scientific Instruction.” By H. H. SALES, Esq.

#### CANTOR LECTURES.

A Course of Four Lectures, “On Painting,” is now being delivered by S. A. HART, Esq., R.A., late Professor of Painting at the Royal Academy, as follows :—

LECTURE III.—MONDAY, FEBRUARY 15TH.

On the Suggestions offered by surrounding circumstances to the Artist.

LECTURE IV.—MONDAY, FEBRUARY 22ND.

On Landscape Painting.

Each lecture will begin at eight o'clock. These Lectures are open to Members, each of whom has the privilege of introducing two friends to each lecture. Tickets for this purpose have been forwarded to each member.

#### FINAL EXAMINATIONS, 1869.

In order to avoid holding these Examinations on the same evenings as those of the Department of Science and Art, it has been decided to hold them, in 1869, on the evenings of

TUESDAY,	the 20th	APRIL,
WEDNESDAY,	the 21st	”
THURSDAY,	the 22nd	”
FRIDAY,	the 23rd	”

From 7 p.m. to 10 p.m., instead of on the 27th, 28th, 29th, and 30th April, as announced in the Programme of Examinations for 1869.

In consequence of this alteration the Previous Examinations must be held earlier, and the Forms No. 2 and No. 4, referred to in par. 6 of the Programme, must of course be sent in a week

earlier than the dates there fixed for receiving them.

It is very important that this alteration should be made as public as possible. For this purpose a number of small slips, to be inserted between pages 8 and 9 of every Programme sent out, have been forwarded to each Institution and Local Board. Large bills, to be suspended on the walls of the Institution reading-room, or in some other public place, will also be sent on application.

In reference to the subjects referred to in the notice at page 9 of the Programme, a sufficient number of applications from candidates in Conic Sections, Navigation and Nautical Astronomy, and Mining and Metallurgy, have already been received. Papers will therefore be set in these subjects.

No paper will be set in Italian.

Local Boards having candidates either in the “Theory of Music” or in “Elementary Musical Composition (Tonic Sol-fa System),” should communicate with the Secretary of the Society of Arts without delay.

#### ELEMENTARY EXAMINATIONS, 1869.

Secretaries of District Unions and Local Boards desiring to adopt the Society's scheme of Elementary Examinations, are reminded that they must apply to the Secretary of the Society of Arts *without delay*, stating the number of male and female Candidates respectively desiring to be examined in each grade.

#### FREE LIBRARIES AND MUSEUMS.

The Council have appointed a Committee to consider and report how the Society may aid in promoting the establishment of Free Libraries and Museums of Science and Art throughout the United Kingdom. The names of the members of the Committee will be published in a subsequent number of the *Journal*.

#### THE THAMES EMBANKMENT.

The Council have appointed a Committee to report upon the best way of dealing with the Thames Embankment, so that the opportunity may not be lost of making this noble site conducive to the embellishment and improvement of the metropolis. The names of the members of the Committee will be published in a subsequent number of the *Journal*.

#### SUBSCRIPTIONS.

The Christmas subscriptions are due, and should be forwarded by cheque or Post-office order, crossed “*Coutts and Co.*,” and made payable to Mr. Samuel Thomas Davenport, Financial Officer.

## Proceedings of the Society.

### CANTOR LECTURES.

The second lecture of the course by Mr. S. A. Hart, R.A., "On Painting," was delivered on Monday evening, the 8th inst., the subject being "The Practice of Portrait Painting." An outline of these lectures will appear in the *Journal* at an early opportunity.

### TENTH ORDINARY MEETING.

Wednesday, February 10th, 1869; EDWIN CHADWICK, Esq., C.B., Member of Council, in the chair.

The following candidates were proposed for election as members of the Society:—

Birkett, Frederick Blow, Hampton-court, W.  
 Brandreth, Edward, 1, Elvaston-place, Queen's-gate, W.  
 Daubeney, Colonel, C.B., Osterley-lodge, Spring-grove, Isleworth, W.  
 Despard, Frederick, West-hill, Highgate, N.  
 Dyer, George, 90, Regent-street, W.  
 Hughes, Samuel, C.E., F.G.S., 14, Park-street, Westminster, S.W.  
 Lermite, Edwin, Muswell-hill, N.  
 Lloyd, Edward, The Winns, Walthamstow, N.E.  
 Trevelyan, Sir Charles E., K.C.B., 8, Grosvenor-crescent, S.W.  
 Wright, Henry W., 3, Keith-terrace, Uxbridge-road, Shepherd's Bush, W.

The following candidates were balloted for, and duly elected members of the Society:—

Cow, Peter B., jun., Streatham-common, S.W.  
 Firbank, Ralph, 4, Rockhall-terrace, Cricklewood, N.W.

The Paper read was—

### THE TRAINING AND EDUCATION OF PAUPER CHILDREN.

By G. C. T. BARTLEY, Esq.

On the 1st of July, 1867, in England and Wales, 331,235 pauper children, under the age of 16 years, exclusive of lunatics, received parish aid. This is nearly one in every 60 of the population. Of these about a seventh, or 48,002, were receiving indoor relief, and the remainder, 283,233, outdoor relief; some 13,700 were attending schools of a satisfactory character, and 22,500 more were attending schools of an unsatisfactory character; but, as regards the remainder, about 300,000 in number, it may be stated, without much exaggeration, that nearly all, if not quite all, were receiving no sort of instruction whatever, but are growing up without the least notion of the rudiments of those subjects and habits which are becoming daily more essential in enabling the poorer classes to obtain an honest livelihood.

The period of the year from which the number of pauper children just referred to is taken being about the most favourable season for obtaining employment, as shown by there being 50,000 more children on the pauper books on the 1st January, 1868, it is clear that those who are then dependent on the parish remain so pretty well all the year round. Nor is it likely that a part of their parish allowance is spent voluntarily, either by their parents or themselves, in education; the whole of the 300,000 must consequently form a large portion of that formidable regiment which, according to the statistics of the census of 1861, receives no education whatever.

There can be little doubt as to what becomes of these

poor children—the boys and, in fact, many of the girls, are the pickpockets and street-thieves of the large towns; many of the girls, even at this tender age, are already hopelessly immersed in vice; and, practically, all prey on society in some shape or other as long as they are able, and end their days either in the gaol or the workhouse. This being the present state of the evil, which is yearly increasing, in spite of all the enactments on the subject, it may, perhaps, be interesting to investigate the working and history of the poor-law regulations for pauper children, ascertaining how they have arisen, and what steps may be taken to meet the increasing evil of neglected juvenile pauperism.

These children cannot be looked upon exactly in the same way as paupers proper, inasmuch as their unfortunate position is entirely due to circumstances over which they could have no control. They are either the offspring of felons, cripples, and idiots, or orphans, bastards, and deserted children, and claim the protection of the law, frequently from their tenderest years, from having been deprived of the care of their natural guardians without fault or crime of their own. Such being their condition, they must either steal or starve in the streets, or the State must take charge of them. It may further be affirmed that in a strictly commercial point of view it is more economical to devote a certain amount in education and systematic training, than by allowing them to grow up in the example of their parents and workhouse companions, to render their permanent support, either in a prison or a workhouse, a burden on the industrious classes. The State, in fact, acknowledges this; and, accordingly, provision is theoretically supplied for all pauper children, not only for their bodily wants, but, to a certain extent, for their mental improvement. At the same time it is also necessary that the other extreme should not be run into, viz., that of treating them so liberally as to hold out a premium to pauperism. In no case should their comfort be better than, or in fact so good as, an industrious labourer has within his reach. Nothing can be more unfair or more discouraging to honest labour than to see a great advantage given to what is in most cases the offspring of improvidence, crime, and often of vice; and the injustice becomes greater when by a forced imposition of law the industrious workman is compelled to subscribe heavily to give those advantages to his inferiors which in most cases he must deny his own children.

The subject will naturally divide itself into two heads, viz.:—1st, the plans which have already been tried and their success; and, 2nd, the work that remains to be done.

#### I.—THE PLANS WHICH HAVE ALREADY BEEN TRIED, AND THEIR SUCCESS.

To Sir James Kay-Shuttleworth belongs the credit of reorganising the system of pauper children's instruction, and in a most able report to the Poor-law Commissioners, in 1838, he pointed out fully the great waste and inefficiency of the then existing system, and sketched out a plan which, if it had then been adopted almost to the letter, would have produced all that could have been desired, and at a reasonable charge to the ratepayer.

At that period even it would appear that most work-houses had a certain sort of provision for the education of the children permanently lodged in them. There was usually a paid master of very low qualification, but the remuneration was so trifling, and the duties so distasteful, as to preclude any teacher of experience from accepting the appointment.

As might be imagined, this education amounted to little or nothing, and the per-centage of children who could neither read nor write was very great. The teachers had a further disadvantage in the fact that the number of children who remained permanently in each union was so small as to render it impossible to have regular classes, and the daily intercourse of the young with the depraved and hopeless paupers most effectually eradicated

any good which a few hours' daily teaching might tend to produce. Again, the union was the child's home, and ever remained so; it knew no other; its earliest remembrances were of its walls, and thus the idea which of all others it was desired to eradicate from the child's mind was more carefully instilled into it, making it, in fact, a young pauper.

These and many other weighty reasons, as Sir James reports, clearly convinced him that the whole system was bad, and he pointed out that, by a mutual arrangement of unions in counties or districts, efficient schools might be formed, with better teachers and much less cost, more careful management and vastly superior moral benefit to the children. Sir James in this report proposed that schools of about 400 to 500 children should be formed, and suggested that some unused union-house or other available building should be adapted and used as the district school. He allowed one master or mistress, at £100, and maintenance 10s. a week, a second master or mistress at £60 and 10s. maintenance, a chaplain at £100, a tailor and shoemaker at 15s. a week, and a laundress at £15 per annum and 5s. maintenance per week. These latter to work for, and, to a certain extent, educate some of the children in their respective trades. This produces a total of £470 per annum, or, as nearly as possible, £1 per head for the total cost of a very superior educational staff, both religious and secular.

This was found to be less than half the aggregate cost of supplying the same number of children with most inferior instruction under the system of a schoolmaster to each union, a system which still exists in very nearly all parts of the country, though in the larger unions a separate building is appropriated for the children. The cost of the building, if an unused union house were to be had, would be trifling; and, even when premises had to be hired or built, the cost would be little, if any more, than the regular rental of the extra space in the union if the children were kept there; whilst the other items of cost, viz., food and clothing, would be much the same, or rather less, by keeping together so large a number.

Such was, broadly, the excellent system of Sir James Kay-Shuttleworth, and had it been carried out strictly in every district in England, the effect would have been most salutary both to the paupers and the ratepayers. Unfortunately, however, the farming system, which was then growing up, afforded greater attractions to the guardians, as being undoubtedly a more easy and less expensive method of getting rid of their troublesome charges. Theoretically, this plan consisted of very large district schools, where the children were sent, at a fixed charge, varying from 3s. to 4s. 6d. a-week, to be fed, clothed, and educated, but with this essential difference, that the schools were private commercial speculations, in the hands, usually, of one person. As a consequence, the sole aim of the proprietor was to make profit. At the sum charged he could only do this by stinting the children in every possible manner. The system grew to great proportions until the year 1848, when it culminated in the awful disclosures at the trial at the Old Bailey of Mr. Druet, for the murder of 150 children at Tooting. The horrible treatment the children received, the overcrowding, and almost starvation on bad food, caused a sudden outbreak of cholera, and the effect was so startling that, although Druet was acquitted of murder, his ill-treatment was but too apparent, and the farming system became doomed. This was forcibly stated in the conclusion of a leading article in the *Times* on the subject, on the 16th of April, 1849—"There is but one favourable point in the terrible tragedy, which is that the deaths of these 150 Tooting children must effectually break up the child-farming system—and for ever."

Since this period the education and maintenance of these children have depended much on the size and wealth of the unions to which they belonged; the different plans adopted for their improvement may be divided into four classes, viz.:—

- 1st. That in the district school.
- 2nd. That in a separate school building belonging to one union.
- 3rd. That in a national or other school in the neighbourhood of the union house.
- 4th. That in a school in the union house itself.

1. *As regards that in the district school.*—The distinctive feature of the district school is that it belongs to several unions, and is, therefore, managed by gentlemen with no other functions than the charge of the school; these are selected by each set of guardians from the unions or parishes which have amalgamated to form the district, expressly to look after the school; on the contrary, when a school belongs to one union, it is managed by the guardians of that parish, and is only a part of their general duty. Of the two systems, the district school has, undoubtedly, the advantage as a scholastic institution, but, in a financial point of view, it may be doubted whether it is, as at present managed, altogether so advantageous or economical as the union school. The obvious intention and limit of the school, viz., to enable the children to get their living honestly, and in the lowest station of life, are often forgotten, and the curriculum becomes immensely superior to that which the industrious labourer can hope by honesty to give his child. The board of guardians, it is true, often err in the opposite direction, and reduce their school to uselessness by false economy; but the district school managers, not being, as it were, actually responsible for the whole cost, are apt to be tempted, by the glory of a magnificent institution, into unnecessary expenses, all of which advantages are really an injustice to the ratepayers, and individually a premium to pauperism. For the buildings of these schools, palaces have been erected at a fabulous cost. Nothing seems too good or spacious for them; like many amateurs they have rushed into bricks and mortar, and one district seems to wish only to eclipse its neighbour in the splendour of its pauper children's mansion. For instance, the one at Leavesden, near Watford, under the St. Pancras guardians, now being constructed at a cost of £50,000, will contain 700 children; at 5 per cent. this is a rental of £2,500, or just £3 11s. 8½d. per head per annum for interest on building, to say nothing of repairs. It is true that this only amounts to about three farthings in the pound on the rateable value of the district, as is urged in justification of the expenditure, but, if it were but the fiftieth part of a farthing, it would still be excessive.

It appears that, as a temporary arrangement while the Watford school is building, 175 children are accommodated at Plaistow, under the same board of guardians, in three old houses, at a rental of £230. The houses do not seem to be full, but, even if they were, this is only a cost of £1 6s. per head per annum; and if the 700 children above mentioned were thus housed, no less than £1,600 per annum would be saved by this parish alone for rental. Many middle-class schools, with 50 pupils paying from £80 to £100 a-year each, are located in houses, the rentals of which do not exceed £100 per annum, being £2 per pupil, or a little over half the cost of the Marylebone pauper children's home. This case further exemplifies the wisdom of Sir James Kay-Shuttleworth's report in 1838, where he advocates the use of some disused union house, or other large building, which can generally be obtained in the least fashionable part of a town.

There appear to have been several legislative reasons which have prevented the rapid increase of the pauper district schools, and at present only six are in operation. They are in the following places:—The Central London at Hanwell, Farnham and Hartley-Wintney, North Surrey, Reading and Wokingham, South East Shropshire, South Metropolitan; and their costs and other points of interest may be gathered from the following table:—

	Cost of building.			No. of children at each school in 1867.	Payments from Parliamentary vote in aid of teachers' salaries in 1867.		
	£	s.	d.		£	s.	d.
Central London at Hanwell .....	84,000	0	0	1,056	1,097	8	11
Farnham & Hartley-Wintney ..	12,081	10	6	131	220	0	0
North Surrey....	48,614	0	0	724	808	6	6
Reading and Wokingham ....	200	0	0	124	282	0	6
South-East Shropshire .....	650	0	0	165	185	6	5
South Metropolitan.....	50,600	0	0	1,143	862	4	6
Total.....	*195,645	10	6	3,343	3,455	6	10

\* The discrepancy of £500 must be caused by a misprint in one of the details.

In examining this table it must be remembered that the sum stated as paid from public money for teachers does not represent their whole cost. The Government grants only supplement the payments to industrial teachers, the other part of their salaries being paid from the rates. What addition this would make is not discoverable from the reports, as the proportion of industrial or trade teachers to ordinary teachers is not stated, but doubtless the addition would be considerable.

Leaving out the Reading and South-East Shropshire Unions, which are evidently converted buildings, the cost of the other four was £195,295 10s. 6d., and last year they accommodated 3,054 children, or each child's rental, at five per cent. on the outlay of the building, amounted to £3 3s.; the South Metropolitan being the lowest at £2 4s., and that at Farnham the highest, at £4 12s.

The cost of the teachers' payment for the instruction of these children also varies considerably, amounting at Reading to £2 5s. per head from the Government grant alone, whilst the average cost of the children of the artisan class, under the Educational Department of the Committee of Council, in 1867-8, was 14s. 8½d., including cost of administration and inspection, which does not enter into the above sum of the district school. The working expenses of the schools are paid out of the rates, and consequently not published and presented to Parliament in the Poor-law Reports; they are therefore difficult to ascertain, except for those connected with the management. From a report recently published, it appears that last year each child at the Central London School cost the enormous amount of £40 10s. 7d., and this year it is stated in several newspapers that it will even reach £50. However this sum may be made up, and whether it includes the great cost of rental and tuition, with Government inspection and supervision, it is difficult to say, but a clear statement of the items in full detail should be published by each board of managers.

While asserting most clearly that the cost of these establishments is enormous, so much so as to render their universal adoption impossible, at the same time it must be fairly admitted that their action is beneficial; they undoubtedly do, to a certain extent, reform some of the pauper children, and a proportion of their inmates are converted into respectable citizens. It is impossible to over-estimate the importance of such results, and if half these children turn out well, no doubt the ultimate benefit to the State is worth the cost, yet in arranging a system for universal adoption, it is clearly necessary to make it practicable as much in cost as in anything else. Were all the pauper children treated as the favoured few in these district schools are, the cost to the country would be intolerable.

2. *As regards Schools in Separate Buildings in Con-*

*nection with one Union.*—The second description of pauper schools is that which is in a building entirely separate from the parish union. These schools exist in about sixty places, more particularly in the larger unions. The exact cost of the schools it is almost impossible to ascertain with any certainty, though it may probably be considerably lower than that of the district schools. Mr. Tufnell, in his report last year (20th Report Poor-law Board, 1867-8, page 131), states that on the whole nothing can be more satisfactory than their general condition. They provide for about 10,500 children. In action they may be said to resemble the district schools on a smaller scale.

3. *As regards Pauper Children who attend the National or other Schools in their respective Parishes.*—This is a system of nominally providing for the education of the pauper. It is adopted in places where the union is too small to provide a teacher or schools, but in most cases the benefit to the children is very small indeed. Frequently no systematic order is enforced for sending them, and those who do attend are generally looked upon by the school as "merely paupers," and the amount of instruction they receive is about as much as their own unaided sharpness enables them to pick up. About 24 unions adopt this plan, and some 600 children are neglected by it accordingly.

4. *As regards Schools in the Workhouses.*—This class of schools is unfortunately the largest and, at the same time, necessarily least efficacious. About 480 unions out of the 655 either have no school at all or one under the same roof as the workhouse. The amount of training in this case to the children is indeed small, except as far as learning to follow in the steps of their companions in pauperism and often, alas, in vice. Any benefit they derive is soon eradicated by contact, and the good effected to these 21,000 children must be looked upon as very trifling. As a specimen, Mr. Tufnell reports (20th Report, 1867, p. 135), that in 1852 out of 23 young men and boys in the able-bodied wards of the workhouse no less than 14 had been in prison, 3 once, 4 twice, the rest from 3 to 20 times, and at the same time there were 19 young women in the able-bodied wards equally depraved; all these were brought up in the schools of the Brighton Workhouse.

Such is a brief outline of the existing regulations, but it will be remarked that they extend entirely to the children who belong to the in-door class, and that the large class of out-door pauper children are in no way provided for. Their education and training depend entirely upon accident, and, consequently, usually end in their learning nothing at all.

## II.—WHAT REMAINS TO BE DONE.

From the preceding it appears (as asserted at the commencement) that of the 331,235 pauper children, which may almost be called the permanent establishment, 3,343 attend the district schools and are educated well, at an enormous cost; 13,500 attend the separate workhouse schools, and are also fairly educated at perhaps rather a less cost; 600 attend national schools with but little profit; and 21,000 attend only the school in the workhouse with almost no good at all. The total, therefore, provided for in some way is about 36,000, leaving the astounding number of nearly 300,000, for whom, as has been shown, hardly the slightest provision is made. By far the greater part of these are out-door paupers, and consequently under little or no control, though dependent on the parishes. What becomes of these? By far the largest part must be *habitual and permanent* paupers. They are all under 16, the sexes about equally divided. Can there be a doubt as to the history of this army of pauper ignorance? They are all totally ignorant; this is clear from the fact that they attend no sort of school; they therefore cannot hope to earn their living beyond the chance existence of a street life. They live on the parish to a certain extent; they form over a third of the pauper class, and may be said to cost

about that same proportion of the £6,959,841 spent on the poor, or little short of 2½ millions. It is evident that these wretched children recruit the armies of crime and villany, and can it be wondered at? They exist, of that there is no doubt, and some of them at times live extravagantly, but it is quite plain that the parish contribution which they receive does not supply the means for such depravity; the remainder must be robbed or forcibly taken from those who have failed to give them a chance of bettering their condition in their early days.

It would seem that the whole pauper question might fall into insignificance if by some miracle this class could be wiped out. Our prisons and workhouses would in a year or two be comparatively desolate if it were not for these poor creatures, who are born paupers, brought up paupers, live paupers, and are fortunate if they die paupers, without a deeper stain upon their foreheads. Their only object in life from their very first appearance seems to be to cause trouble and difficulty to all around them, and yet it honestly is in most cases not their own fault. The greater the difficulty, and the larger the dimensions of the evil, the more need there must be to make some rapid and radical change in the existing state of affairs, and it must undoubtedly behove the State to take some decided step to remove this curse to the country at large. For to these hundreds of thousands of children it may be said, without profanity, that it would be better for them that mill-stones were hanged about their necks and they were cast into the sea, than that they should grow up as they are doing, cankering the very core of the society which so neglects them.

It is quite clear, therefore, and no one will gainsay the assertion, that some means should and must be very soon taken to educate and train these children, and it is equally clear that no system of voluntary education can ever be of any use; whatever is done must be compulsory. Some plan must be invented to get hold of them by force, to restrain them when young from practising evil as their natural occupation, calling, or profession, and to teach them something better.

No poor law system can hope to be called perfect when the young are neglected. The number of adult paupers will fall to a minimum if its ranks are only recruited by the unsuccessful and unfortunate, but how can it fail to increase when we are always bringing up a permanent staff, of some three hundred thousand strong, in such complete ignorance and depravity?

The following scheme is accordingly submitted, after much consideration, not with feelings of over-confidence in its details, but more with a hope that it may lead to an energetic movement for beginning a reform of the Poor Laws, by properly providing for the training and education of the children.

The duty of a parent is accepted by law to be that of providing for his child until he or she is of age to work for himself. In the case of pauper children who have been deserted, or are orphans, or those who are habitually on the parish books from some cause or other, this parental duty has not been fulfilled, whether culpably or not does not affect the question. The state, or parish, or community, it matters not which, has stepped in and given the child those necessities which the parent should have given, and where it can, of course forcing the parent to pay the cost. Thus, whether pleasant or not, the community has, to a certain extent, taken these children on its hands, and it would seem that it has a right to demand some return for this in the same way that a parent habitually does. Would it, then, be unreasonable if every pauper child who regularly receives and lives on parish allowance were bound to enter a certain school? If the State were to say, not as it does now, "every pauper child we will feed," but "if we feed him he must earn his bread by learning what we think proper to teach, and living at this school for a certain number of years;" this would be interference with the liberty of the subject, it is true, but might it not be very bene-

ficial interference, and really be the means of saving thousands?

Two objections will no doubt be raised to thus obliging all confirmed pauper children to enter the schools, viz., that by so doing a provision is being made for any unscrupulous parents to get rid of their offspring by casting them on to the State, and also that the parents would be deprived of whatever earnings these children might hope to make. No doubt the former of these, if encouraged, would be a very serious evil, but it would be no more difficult to prevent than the present desertion of children, and in all cases parents who were able should be made to pay, according to their means, towards their children's support in the schools, without, of course, the power of taking them out till they had passed the required standard of knowledge. Regarding the other objection, it must be remembered that these are children who in July receive *parish aid*; they cannot, therefore, earn much, or in any way assist their parents.

The schools for this purpose would, of course, have to be made expressly. In some cases old union houses might be used, or other buildings erected, though not in the style of the pauper palaces at Hanwell. Each might hold about 1,000 children, and should be placed in a healthy but economical district, with a few acres of land, and, when possible, near the sea. The staff might be much as Sir James Kay-Shuttleworth suggested, and, in fact, that gentleman's plan, as before sketched out, might be copied with advantage, adding any improvements which 30 years' experience might suggest. In all cases the children must, for the time, board at the schools; the strict unbroken discipline, and removal from the influence of their pauper associates, being equally important with, if not more important than, any branch of the education. This could not be attained by a day-school.

The objections which some persons have to this compulsory system are really not insuperable, and as the idea of compulsory education for all classes of society has been seriously mooted, surely in the case of paupers whom the community feed and often clothe, it is not asking too great a return to be allowed to force a further advantage upon them. Again, the idea of educating and training permanent pauper children is acknowledged to be a good thing by the community, as shown by the amount of money already expended for the purpose out of the rates and Parliamentary votes. If this be so, it must be better for all to have some training than for less than a tenth to get the benefit. If all willingly joined such schools instead of infesting our streets, no one would doubt as to the advantage to the community; surely, then, the fact of their being so ignorant as not even to know the good to be derived from the school, makes it not less, but very much more necessary to force them to qualify themselves for honest labour, not for their own good only, but for the benefit of the community.

The course of instruction at these proposed schools would necessarily vary; except that all the inmates would have to work, and work hard. They must be schools for work, if not workhouse schools. The boys should be taught reading, writing, and arithmetic, a sound idea of religion and morality, gymnastics and drilling. No attempt at teaching any trade would appear advisable. This is particularly stated in the 7th report of the Poor-Law Commissioners, page 47, in speaking of the training of workhouse schools. It says, "Some are taught tailoring, some shoemaking, some carpentering, and some are occupied in the garden; but still, the several employments in after life of the boys reared in the workhouse must, it is believed, in the great majority of instances, be of a description that does not admit of previous training or tuition within the workhouse, or at least in no material degree. The kind of skill requisite for such success in such employment must, in fact, be acquired by continued practice; and all that can be done in the way of preparation for the most part, is to send the youth forth imbued with habits of industry,

and with his frame braced and strengthened and inured to laborious exertion, and with his temper and mental faculties duly cultivated; and, above all, with a sense of religious duty deeply impressed upon his mind." For girls, the details of the instruction must be somewhat different. Needle-work and household servants' duties should be attended to; all the washing, mending, sock-making, &c., of the establishment, would give employment, together with a careful and strict course of training, not only as to book-work, but bodily and mental habits of regularity, discipline, and obedience, are even more important than the former. No abler advice could be had in this respect, both for girls and boys, than from Mr. Tufnell and his colleagues.

It might, probably, be advisable to divide these schools, not so much into districts as into ages and classes of boys and girls, drafting them from one to another as they grow older, and thus changing their associates. Any unusually bad specimens might be removed to separate establishments for stricter discipline. The necessary number of schools would render it easy thus to classify the children as might be thought best with only the slight extra cost of travelling.

The greatest responsibility to the state in thus taking charge of these children is the difficulty of getting rid of them again; and the more so in such large numbers. It is probable that the young applicants for parish relief might fall off if they knew they had to enter such a work-school, but it would not be safe to take less than 300,000 as the number of children. As a fundamental principle none should be allowed to leave the schools until they had passed satisfactorily a certain standard of knowledge and training. It may be said that this might tend to encourage them to be idle to stay, but by judicious treatment and by rendering the discipline severer to those who were thus refractory, not many would remain incorrigible. Besides, if some were so, and would not work in the school, it is certain they would not work honestly outside. They would be prevented by this self-imposed imprisonment from doing mischief, and at a known cost of much less than that unknown and incalculable amount of damage which they would probably cause by robbery and violence during their training as criminals.

Taking, then, 300,000 as the number of children of all ages in the schools, about twelve per cent., or say 40,000, would be eligible to leave each year, that is 20,000 of each sex. These divide themselves at once into two classes—the able-bodied and the sickly.

1st. The boys. The best of the able-bodied boys might all be allowed to enter the navy, both the Royal and mercantile services. Sailors are much wanted, and if entering the service were made the boys' ambition, they would look forward to it, and in time even work for it. The advantage of recruiting the navy from this source is very strongly urged by Mr. Tufnell in his report on Union Schools, published in the Twentieth Report of the Poor-law Board, p. 132-4. He says—"The opening for boys in the Royal and mercantile service is far greater," *i.e.*, than in the army bands, which he also recommends as a suitable opening for them. "The deficiency of sailors is well known; many ships go to sea half manned, supplied with Lascars and foreigners, who often do not understand English, and generally fail on an emergency."

Now it is quite possible to train boys to be three-parts sailors by certain arrangements on dry land, as is proved by several instances. All that is necessary is to erect in a yard the deck of a 200 or 300 ton ship with appropriate sails, masts, and rigging; a well qualified seaman should be engaged to instruct the sailor boys daily in the names of the different parts of a ship, to mount aloft without fear, &c., to set and furl the sails, and, in fact, perform all the duties required of boys at first going to sea. Experience decisively proves the success of this method of training. Captains of ships prefer boys so trained

to any others; and I have been informed by some they would rather have a boy so trained fourteen years of age, than a finer boy of sixteen untrained; the training advances the boy two years in the profession of a sailor. . . . Captains eagerly engage these boys without premium." One might imagine the feasibility of converting one or two of our old men-of-war without much cost into such schools, and allowing the entry to be a sort of prize for the best boys at all local establishments. Mr. Tufnell continues—"Boys engaged in the Army or Navy are at once removed from the evil influences I have alluded to" (*viz.*, pauper influence and idle associates). "They have a certain occupation from fourteen or fifteen years, are, during that time, kept under proper tutelage, which is especially desirable in the case of these friendless youths, earn good wages, and, as experience shows, almost invariably give the greatest satisfaction to their superiors. If I had my will, I would bring up every pauper boy either to be a musician for the army or navy bands, or to be a sailor for the Royal Navy or merchant service."

This would provide for all the cream of the boys, and at an early age. As regards the remainder, they must obtain employment after passing the standard of proficiency in the ordinary duties of agricultural and other labour. Their training at the school would have benefited them, and engrafted certain principles and habits tending at any rate to give them a better chance than as outcasts they would ever have had. If a half—nay, even a quarter—turned out well, how amply the State would be repaid!

2nd. As regards the girls. It does not seem so difficult to dispose of them. Mr. Tufnell says (20th Poor-law Board Report, page 132):—"There is no difficulty in settling the purpose for which girls are to be trained. They should be made household servants." From the general complaints of the public, there can be no doubt but that a large number of this class could be employed with great advantage.

Some, of course, of both sexes would still remain, *viz.*, those who could not obtain employment, or, having obtained it, were dismissed, and so returned again to the parish relief, the incorrigibly idle, who could not pass the standard, and the very sickly and diseased. Something different would have to be done for these. The permanently sick must be placed in the workhouse or hospital, and remain on the hands of the community, as, in fact, they really do now. The unemployed and the idle, after having had a strict training till a certain age, if they returned again to the parish, would have to be got rid of, and the only plan that seems to suggest itself with the greatest advantage is emigration to the colonies.

This emigration should be absolutely imperative at a certain age, and in no way optional to these two classes of paupers. All would have been done for them, and either by their own want of appreciation of the advantage offered, or by their misfortune in not obtaining employment, nothing would seem to remain but to give them a final chance, with a free grant, perhaps, of a few acres to the young men in a land where labour can be utilised to any extent, and where their only chance of subsistence would be by labour, and that alone.

Could such a system be considered hard, would it not strike the vital parts of pauperism, by draining the spring of its ever-increasing stream? The state would, as it nominally does now, have taken charge of the children, brought them up, acted as their parents, and in return demanded two things:—1st. A sound and strict training. 2nd. A useful and honest means of livelihood, or, failing this, emigration.

Obtaining suitable buildings for these schools would, doubtless, for some little time, be a difficulty, though not at all an insuperable one. As already stated, possibly a few of our antiquated fleet might be turned to good account. No better plan could be adopted than that suggested by Sir James Kay-Shuttleworth, *viz.*, of



utilising all unused workhouses, or renting large buildings in decayed parts of towns. Where necessary, and this would be in many places, schools would have to be erected, though not on such a scale as the one at Hanwell. The cost would undoubtedly be great, and the money could only be raised by the Government in a similar manner to that adopted by the district schools, viz., by a charge on the rates over a certain number of years. The number of children to be placed under one roof would be best known by those familiar with the working of the district schools, probably about 1,000, and all of one sex, as the number of schools would render the division of any one school unnecessary.

The greatest difficulty would undoubtedly be that of providing suitable and efficient teachers and rulers in each establishment. These duties would be arduous, and require patience and firmness in a larger proportion than great learning. In this, as in other matters probably, the want would produce the person sought for; but in all cases the greatest care would have to be exercised in the appointments.

The great point to be considered in such a scheme is the cost. If a plan be ever so feasible, it must be also reasonable in cost, that is to say, not necessarily economical, for in dealing with so great a subject, which has been so long neglected, a large outlay is imperative. If the indirect saving is taken into account, there can be no doubt that almost any efficient system would be profitable to the State.

In the first place, it may be remarked that if such a plan of work schools were in operation, they must necessarily be under the management of the government. Each school could not be managed by a separate union without very much reducing the efficacy of the system as a whole. Classification of the children, weeding out refractory characters to one place, and other detailed arrangements, could only be properly carried out by a central administration. The funds at the disposal of this department would be supplied from the Exchequer or local rates, as might be considered best. The union officers, being acquainted with the persons in their districts, would be the means of feeding the schools, the simple rule to guide them being, that children under a certain age, say 16, who systematically applied for parish relief should, as a matter of course and necessary consequence, be relieved by being sent to the school. This rule might require discretion in its action in some cases; a hard-working boy in temporary distress, who had been fairly educated, might, with advantage, be left at home, though for several years it is not likely that a tolerably strict carrying out of this regulation to the systematic applicants for relief would do much harm.

The amount of relief granted, in 1867, to the 931,546 paupers, was £6,959,841. At this rate the 331,000 children cannot cost much less than 2½ millions, or at the rate of £7 10s. per head per annum. This sum is spent, therefore, without any return beyond the support of so many helpless individuals, and the partial education of the favoured few who attend the district and other schools, as explained above.

What addition would some such plan as the proposed schools entail on the community? In the first place, taking Sir James Kay-Shuttleworth's estimate, in the year 1838, for the cost of a thorough educational staff at about £1 a head, the cost of provision and clothing at 4s. a-week, or £10 10s. a-year (the estimated cost of the children at the North Surrey district school), the cost of rent of each child, interest on building, &c., at £2 10s., and taking the cost of inspection, central administration, and miscellaneous charges as high as £3 10s., which should be an excessive estimate, a total of £17 10s. is made, or £10 more than the amount expended at present. For this extra sum of £10 per head, or three millions per annum, with a slight addition for emigration, a large part of the army of street arabs and idle youths, 300,000 strong, might be swept from the streets, and usefully trained to habits of industry.

Supposing, by way of example, they all turned out badly, would the money have been thrown away? Far from it; while at school they would have been kept at as low a charge as possible, free from mischief; had they been loose, by some means or other they must have consumed nearly as much as at school, and the chances are, nay, the certainty is, that many, if not most, of those over five or six years of age would cause ten or twenty times the amount of damage as pickpockets and thieves. Again, suppose that half of them turn out well, and this does not seem an absurd hypothesis, this surely requires no argument to prove the advantage and economy to the State as a return for its large outlay. It might further be hoped that as the system developed the number of such children, and consequently the expense, would sensibly decrease.

In concluding these remarks on the subject of the training and education of pauper children, it must be borne in mind that the present regulations and provisions only affect a few of the pauper children for which they are framed; nothing like a tenth receive any benefit at all. The two extremes of the system tend, first, to a too rigid economy and consequent hurtful neglect; and, second, to a too great extravagance and consequent injustice to the industrious. As a matter of economy and advantage to the community, it is universally acknowledged to be beneficial to do something for the children, but how much or how little requires great care to determine. By recognising the system of district schools, the country has agreed that the children should be fairly educated; but it has been shown that the system is so expensive as to render it impossible, without some risk of producing an insurrection of rate-payers, to adopt it at once all over the kingdom, its comparative smallness only now saving it from radical reform. Again, the advantages given to the children surpass by many degrees those of the industrious hard-working class; this is neither fair nor politic. On the other hand, the emergency is great; thousands, indeed hundreds of thousands, of children are growing up in vice and ignorance, and by some power they must be arrested in their downward path; little short of a miracle will do this—and it is certain that without some compulsory power they will never enter a school, or of themselves wish to be taught better; and, at the same time, the State does not wish, unnecessarily, to force any, or to interfere, without great caution, with the liberty of the subject; it does not want to be saddled with the offspring of all the poorer classes; the schools must not be looked on as provided by the State to take children off the hands of those who should provide for them, nor should the children prefer them, like the thief often, does the prison, to his free state, because he is fed well and worked little. To provide for the want, and yet to guard against these abuses, it is believed that some such scheme as the one proposed might be beneficial.

The compulsory entry into the school of all within a certain age, say 16, who receive regular parish aid, would at once reduce the claimants to a minimum, but generally secure the very young and helpless whom it would be most important and promising to get hold of.

The habits of the school being systematic, strict, and when necessary severe, would tend to discipline these rough spirits, and train them as human beings, and keep them away from evil influences at an age when their minds are susceptible of influences for good.

As they grew into youths, their nature would make them long to be free and in the world; but their freedom could only be bought by a certain proficiency which they would thus be glad to work for. When they left the schools after passing a certain standard, they would be fitted for employment by habits of honesty and industry, the best being allowed to enter the navy, others hired as labourers, servants, &c.; and as nearly all would enter the schools without the stain of crime, their start in life would indeed be different to what it is at present. The power of sending them to the colonies



at a certain age, if they could not or would not obtain employment, or if they returned to the parish relief, would give all an opportunity of earning their living if so disposed, and if not disposed, the consequences would fall on themselves.

These compulsory powers and consequences, while acting thus beneficially in the schools and to the public in this way, would also prevent the schools from being looked upon by the industrious poor as unfair to themselves. At present these may fairly compare the pauper at the district school to their own boy at the national or village school; but not so when they know the discipline of the work school, and the compulsory power which the community has over the children.

Concerning the cost, an attempt has been made to show that though adding a large sum directly to the expenditure of the country, there can be no doubt but that an absolute saving would at once be effected indirectly; the ultimate good could hardly be estimated even in money value, but a change might be produced in the moral aspect of the country greater than the most stringent criminal penalties.

If it be the case, and no one will be found to gainsay it, that the present state of matters requires great improvement, surely, even out of selfish motives, it is high time that something was done. By thus beginning at the right end, "prevention being better than cure," as has been said over and over again, many, if not a majority, of these wretched children, who so often are a curse to the community, might be rescued, and, with the divine blessing, converted into industrious, honourable, and honest, though humble, citizens.

#### DISCUSSION.

The CHAIRMAN said the author had done well in bringing this subject before the Society, for whilst it went to the seed plots of habitual criminality it went to the foundation of the Society's objects in the promotion of Arts, Manufactures, and Commerce, for which the extension of intelligent aptitudes amongst the wage classes was necessary. It distinguished the great class of the community for whom compulsory measures for education were chiefly in question. But, much from default, no doubt, in the available documentary information, Mr. Bartley had made some mistakes. One was in ascribing the plan of the separate treatment of pauper children in separate buildings to Sir J. Kay-Shuttleworth. It would be found to have been distinctly laid down in the report of the Commissioners of Inquiry, who pointed out that for the most part existing buildings might, at all events in the first instance, be appropriated to the purpose instead of building new ones. The Stepney school, an old building, for all classes of paupers, on the principle of the union-house, had been adapted to numbers of children equivalent to those aggregated in the district schools, and, by improved appliances for ventilation, notwithstanding the lower neighbourhood, competed with those new buildings in remarkably high sanitary results, and was an example justificatory of their recommendations that might most probably be extended, greatly to the relief of the ratepayers. The contract establishments spoken of, instead of having sprung up under the auspices of the first poor-law board, were in existence previously to its institution, and it took early steps for their removal. But the contractor of one of those separate pauper children's institutions, Mr. Aubin, displayed a desire to carry out faithfully whatsoever might be suggested to him, and Sir J. Kay-Shuttleworth, then an assistant commissioner, was instructed, together with Mr. Tufnell, to see what might be done with it, as an example of the treatment of destitute children in separate buildings. At his (the Chairman's) particular instance, it was based on the half-time principle, and was conducted on that principle in combination with industrial training, including naval and military drill, of which the Stepney school was now the

chief example. Mr. Aubin's school ceased as a contract school, and the old buildings, which had well served their first purpose, being inadequate to the increasing numbers, the guardians were led to build the Central District School of London, which they did in their own way, with extravagant ornamental columns. But the statement that the expense was between forty and fifty pounds per head was an example of current exaggerations. The official return of the expense was £24 10s., but of this £6 10s. was for the repayment of principal and interest on the loan for the construction of the building. But the real normal expense of district schools, apart from the expense of building, was displayed at the Stepney Institute, where the weekly cost of food, which included meat rations, was 2s. 2d.; of clothing, sixpence; of school instruction, threepence; three farthings for the industrial master and mistress (the tailor and the needle mistress); teaching the naval and military drill, 1½d.; superintendence, sixpence half-penny; altogether, 4s. 8d. per week, instead of double and treble that amount which had been put forth. The school instruction, which cost 4½d. a week, including the naval and the military drill, or the physical training, was a great advance in the educational art, in economy, in time, in money, and in efficiency of result. It had yet to be made known and to be understood by the changing political chiefs, heads of departments and members of Parliament dealing with the education question, that the power of teaching in time, and very much as to expense, is as the numbers. A single master in a union, or in any single-chambered school, could not well teach more than about forty scholars of varying small classes, even with the aid of a pupil teacher, or get through the "three R's," as they were called, in less than six years, and as a good master could not be got for less than £80 per annum, the cost of teaching could not be set down at less than £2 per head per annum, or ninepence per week. But it had been demonstrated in these institutions that by teaching on a larger scale in schools of ten times that number, affording large classes for simultaneous teaching, and a division of educational labour by a trained staff of masters and pupil teachers, beginning with a head master at three times the salary of the single teacher and more, including the drill masters and a drawing master, the child could be got through the "three R's" far better in three years at an expense for teaching and training power of less than £1 per head per annum; demonstrating that by an application of neglected legislative and administrative arts in obtaining the proper aggregations, three or four pupils might be taught and physically trained well at the cost of the mere long-time scholastic teaching of one scholar comparatively ill. Ignorant and wasteful unpaid administrators, the guardians, objected to the training, that they did not want to make the children sailors and soldiers, but it was their duty to make them honest, productive, self-supporting labourers, and good subjects, and under their system they made bad and dependent ones, inapt for labour; for, as he had found it, two out of every three turned out ill, mendicants, paupers, delinquents, and spoilers. But in these district half-time schools, the failures to get productive employment and keep it did not amount to more than two per cent. instead of sixty. It was demonstrated that the drill and the physical training gave to three the efficiency of five for all purposes of ordinary labour, and this might be done for the entire labouring population. Guardians objected to teaching children elementary drawing, though, in imparting accuracy to the hand and eye, teaching elementary drawing was proved to be almost as important for handicrafts as teaching writing; and for less than a pound per head that qualification might be imparted to serve for life. The success of the mixed training was proved by the outcome wherever it was applied. Classes might, on this system, be taught in separate buildings, in the crowded urban districts where they were to be had, and the expense of new large

buildings avoided, though, for this purpose, the areas of administration would often require to be greatly extended. Such, however, as he had stated, were the demonstrated advances in teaching and administrative art, which had been overclouded by the incidents in the guardians' unchecked extravagance, in their unpaid and really irresponsible administration.

Dr. STALLARD said all would agree that the subject of pauperism should be dealt with at the root, but as yet he feared that they were at sea as to the mode in which the great work should be set about. He would first allude to the character of pauper children, and then call attention to the different modes in which they had been treated, and endeavour to show that it was impossible for any recommendation like that made in the paper to be efficiently or generally carried out. In the first place he believed the magnitude of the evil had been understated. There were probably 50,000 children in workhouses, and no doubt the greater part were under education of some sort; the exact number in districts and other schools being known, the remainder were probably those not old enough to receive systematic instruction. But with respect to the enormous number of 300,000 in receipt of out-door relief, he must take exception to the proposal to credit them with a proportional share of the money expended in the relief of the poor. The total expenditure included that of workhouses and all establishments connected with them, and of these very district schools, and in point of fact the poor children in receipt of out-door relief got but a very small fractional part of the amount indeed. He could not suppose for an instant that the State would undertake the charge of these children. He considered it a fault that it did not do so, but there were immense difficulties in the way of dealing with them in the way proposed. For instance, if a widow were left with four or five children, the youngest in arms, they would be reckoned amongst the 300,000, but if she endeavoured to support and bring them up as well as she could it would be impossible to take them away from her. The duty of the State was not to take them away from her, but to assist her in carrying out what was really her duty and no one else's. If they interfered between a parent and children under such circumstances they would at once destroy the sense of parental responsibility.

The CHAIRMAN said that in some places men were known to be at work while their children were in the streets begging, from which they easily progressed into stealing.

Dr. STALLARD was aware of that, and, therefore, the principle of parental responsibility must not be carried out in all cases without exception. He knew a case of a woman in Southwark, who paraded her children about the streets as objects of pity, and though they had been taken up and sent to a workhouse, she had claimed them, asserting that she could and would bring them up herself. In such cases, no doubt, the children ought to be removed and the parent punished, but that was a different question entirely from that of a parent who honestly endeavoured to do his duty by his child, although he could only do it imperfectly. He had nothing to say against the efficacy of the district school system, but he believed it was utterly impossible to deal with a tenth part of the pauper children of the kingdom on such a dreadfully expensive system; and it would be an injustice to the children who were not in receipt of relief. He was so persuaded of the efficacy of it, that he had endeavoured to find a private school conducted on the same plan to which he might send his own children, but he did not think it could be largely adopted. If it were it would be the absolute duty of a widow, such as he had described, who desired to do the best for her children, to abandon them entirely, because they would then receive a much better education than she could hope to provide for them; and the more thoroughly destitute and desolate children were the longer they were kept in the school, and the better

they were educated. He doubted the accuracy of the Chairman's opinion that buildings might be erected more economically, for the St. Pancras School, being built under an administration reputed to be very economical, was to cost about £54,000 for 700 children. It seemed to him that the children could all have been lodged, fed, and educated at home for such a sum. There was another very important point, which was generally omitted in such discussions, viz., the *physique* of children. No fact was more clearly established than this, that wherever a large number of children were assembled together, especially where they began with a poor condition of health, there there would be a great deal of sickness.

The CHAIRMAN remarked that the deaths in the London District School were not above 6 in 1,000.

Dr. STALLARD was quite aware of that, but that proportion was far higher than it ought to be, and a short time ago it had been stated that 40 per cent. of the children were under medical treatment. It was well known that where a large number of children were congregated together they always got ophthalmia; and in the school alluded to they had lately gone to an enormous expense simply to try and get rid of this disease, but in vain. Children from large towns were always physically weak to begin with; and what was wanted was to send them back to the country to get such health as should enable them to earn an honest livelihood afterwards. Again, although there was much to be said for the successful results which had been attained, they were unfortunately much more noticeable in the case of boys than of girls. Moreover, in bringing so many children under one roof they became so many units, all independence of feeling arising from home ties was lost, and nothing was put in its place. One or two attractive children might be noticed or petted, but the majority were mere units, who had none of those individual or local feelings which were found to be the best main-spring to honest untiring industry. This was a very important consideration, and to it he believed it was owing that the district or separate school system had not been more successful. In Scotland, Ireland, Belgium, America, and France, the system adopted was to send back to the country those weakly town children who were deserted, orphans, or destitute, in order that they might grow up strong enough to compete with the labour constantly being imported into the great towns from the country. This was one of the great difficulties in the way of uprooting pauperism in large centres of population, which were constantly subject to the immigration of strong, healthy people from the country. After some years of town life, such a man degenerated, but his children and grandchildren far more so, and they, therefore, had no chance of competing with the fresh, strong newcomer, who could do two or three times as much work, and being, to a certain extent, squeezed out of the labour market, they had to make up the deficiency by their wits. He had lately received a communication from the secretary of the Board of Guardians in Edinburgh, which had about 700 children farmed out in the country. It was often said that this system had been tried and failed, and reference was made to the shocking occurrences at Tooting and elsewhere, but that was not the Scotch system at all; they rarely placed more than two, and never more than three, in the same family; and although the pay was extremely moderate it was sufficient, food being cheap, and being in the country the children did not require animal food. Oatmeal and milk formed a capital diet for children where they had plenty of fresh air, but if they were to try it in the central London school, they would have half the inmates down with sickness immediately. Attempts had been often made to introduce such a diet into workhouse schools, but they had always failed. He was no advocate for a meat diet under all circumstances, because fine strong Highlanders had been brought up without tasting meat until they were 25 or 26, but this would not answer in a large school. Another great

advantage was that the children acquired associations; they felt that they had a home and that they belonged to somebody. This plan was almost universal in France, and it was found that the children had great affection for their foster parents, and very rarely left them; and he believed the same was the case both in Ireland and Scotland. It had also been tried in England by the Eton union, and he believed with success. Another important advantage would accrue if the system could be generally introduced for persons of respectability to assume a species of guardianship over these children; and, after all, every attempt to wipe away pauperism from this country must start with the object of establishing a personal interest between the richer and poorer classes. He would recommend every one who wished to see the arguments in behalf of this system of providing for pauper children fully stated, to read the little book by Miss Florence Hill, entitled "The Children of the State;" and he believed that was the only system suitable for general adoption. He thought the industrial character of the English people had suffered considerably from the introduction of machinery, and therefore it was the more important that, as children, they should receive thorough industrial training. That ought to come before every other kind of instruction. In fact, he should like to see in every union or parish an industrial school, open, under certain restrictions, to all classes alike, for he believed the association of pauper children with those higher in the social scale would be of great mutual advantage, and with each school should be associated a gymnasium, for he heartily concurred in all that had been said with regard to physical education. He would also institute prizes in the shape of dinners for regularity of attendance, and those who made good progress in the lower schools should be entitled to admission to the present district schools.

Mr. E. C. TUFNELL said there was evidently some mistake as to the expense of the district schools, for figures had been quoted in the paper taken from some newspaper, giving the cost per head at the Central London District School at £40; there must be a very great mistake somewhere, for, as had been said by the Chairman, the published reports gave the amount at £24, which appeared very large, but then £6 10s. of that was for interest on the building, and also in part payment of the principal, which would reduce the expense of maintenance and education to a moderate amount. The actual expense of feeding and clothing each child did not exceed about 4s. 6d. a week. It was true the building had cost a great deal, but he did not know that there was any thing superfluous, unless it was the columns in the central part which were put in to relieve the appearance. He had always been in favour of district schools, mainly from their good results. The Chairman had told them that only about 2 per cent. went to the bad instead of 60 per cent., and it must be borne in mind that they had pretty accurate means of judging, because it was one of the recognised duties of the chaplain, in all cases where distance did not prevent, to visit the boys for two years after they left school, and see how they got on. It was, unfortunately, but too true that some of the girls turned out badly, but he feared this could not be prevented while human nature remained as it was. With respect to the question of health, he thought Dr. Stallard had some erroneous views; he knew of no better means of testing the state of health than the proportion of mortality, and, having tested in this way all the district schools round London over and over again, he could safely say that the deaths were not more than two per cent. Some time ago, on the other hand, he had made a calculation how many would have died if they had not entered the schools, and he found that the majority of these children died at the rate of about 12 per cent.; and it was well known that half of all the children born died before they were five years old. If, therefore, the mortality were reduced from 12 to 2 per cent., the state

of health could not be very bad, and as to the number of sick, it was as small in proportion, generally, as in any family in the kingdom, even the richest. The children of the upper classes were often petted, and those of the lowest class starved, out of existence, but in these schools there was food enough given but not too much, and they had a combination of physical and mental training which was highly conducive to health. They were all half-time schools, which was a very important feature. It was remarked in the paper that it was unfair that pauper children should be better off than the children of the agricultural labourer, but it would be impossible to teach them at all without teaching them more than children who left school at 10 or 11. Children in pauper schools could not be got rid of until they were 14, and if they were turned out with no more education than a very imperfect knowledge of the "three r's," they would almost infallibly become confirmed paupers or thieves, and the effect of that on the rates would be enormous. Every pauper cost the country £100 or £200 before he died; and, therefore, it was of the highest importance that the children should receive such an amount of education as should prevent them falling into pauperism; and, in order to do this, they must be educated far beyond the children of an agricultural labourer, who left school at 10 or 11. During the last two years at school the advancement in general knowledge was very great, and if the amount of their education was to be restricted the sole object with which the schools were erected would be lost. With regard to putting children out to nurse, he had had opportunities of considering that subject, and was well acquainted with the valuable little book which had been referred to; and though, under certain conditions, which were not at all general, such a system might work well, it was, he was convinced, impossible to adopt it in such a place as London. In only one union in the home counties had it been adopted, viz., Eton, where there were not more than forty children; the union was small, and so was the workhouse, and there was no difficulty there in finding ladies and gentlemen who would look after the children, and see that they were well cared for. If the same agency could be secured in every part of the kingdom such a system might answer; but suppose they were to substitute it for the South Metropolitan District School, where were they to find a thousand people to take charge of the children? From the crowded state of labourers' cottages in almost all parts of the kingdom, it would be ruinous to the children to place them in such positions, even if cottagers could be found willing to take them. A plan somewhat similar was adopted under what was known as Sir Jonas Hanway's Act, the children being put out in different houses throughout London; but most of them died in about a year, the deaths in many parishes being about 80 per cent. per annum. The consequence was, the Act which led to such establishments as Mr. Druet's and Mr. Aubin's, which were followed eventually by the present district schools, and these he believed to be the best means ever devised for the proper education and training of pauper children.

Dr. ELLIS said he was glad to see the Chairman in his present position on such an occasion, for many of the suggestions which he had thrown out had been adopted, the credit thereof sometimes going to other people. It appeared to him (Dr. Ellis), however, that the fountain head of all this stream of pauperism had been totally overlooked. It was admitted that these poor children were pauperised from no fault of their own, and that many of them began life under the heavy disadvantage of very sickly constitutions, but though this question had been agitated for years, no allusion was made to the great cause of all this evil, namely, intemperance. He had lately busied himself in investigating the condition of some of the worst neighbourhoods in the metropolis, of which, indeed, no one could have any adequate conception without personal inspection, and from

what he saw and what he heard (for he had no difficulty after a little time in gaining the ear of these poor people, and learning their history), he was convinced that drunkenness was the great cause of all the evil. The more complete the provision which was made for the training and education of the poor waifs and strays of humanity, so in great measure would be the supply of them; all feeling of restraint being thus removed from those who gave them birth. If drunkenness went on as it had done for the last century, the nation would become completely debased, both morally and physically, for it was the drunkard's children who had the weak and sickly *physique* which had been so much spoken of. They might attempt to confine the channels of pauperism, but while this great fountain-head existed all their efforts would be comparatively useless.

Mr. CAMPIN said he had resided for some time in the neighbourhood of the South London District School, and, from personal inspection, he could bear witness to the generally healthy appearance of the children, and the excellence of all the arrangements. He was informed that the results also were most satisfactory, particularly in the case of the boys. They were taught gardening, and so on; and he might remark, in reference to the emigration of those who did not do well at home, that he did not think it would be of much use to send men to a colony unless they had some knowledge of agriculture, and also, if possible, of rough carpentering.

Mr. BARTLEY, in replying to the observations which had been made, said that he had not alluded to the education, but to the general treatment of pauper children, when comparing them with the children of the industrious class. He was afraid that it would be absolutely impossible to teach pauper children less than was learnt by the offspring of agricultural labourers, but great care should be taken not to afford them anything in the way of comforts beyond what was absolutely necessary; they should be made to feel that they really had to work. It was quite another question, and one not within the scope of his paper, whether the children of industrious labourers ought not to be better provided for; of course, they ought to have a better education even than the paupers. There was no doubt that drunkenness was the cause of the greater part of the crime and pauperism in the country; for instance, he was told once by a large manufacturer at St. Helen's, who paid several hundreds of pounds in wages every Friday, that three-fourths was in the hands of the publican by Monday morning. No doubt this was the cause of the whole difficulty, but if they waited until that was got rid of before doing anything for these wretched children, he feared they would never begin at all, at any rate not in the present century or the next. On the contrary, his hope lay in this, that by the better education and training of the children the next generation would be less inclined to fall into this evil habit. There was no doubt that pauperism was increasing, and he believed the only way of checking it would be to take the young pauper and bring him up in better habits than his father had been taught. He did not think there was any chance of redeeming a confirmed pauper at the age of 40, any more than a confirmed drunkard; they were so degraded in moral tone that no human power could restore them, but by getting hold of the children, there was a hope that the class would in time die out, or at any rate be reduced to a minimum.

The CHAIRMAN, in proposing a vote of thanks to Mr. Bartley, said he must differ from some of Dr. Stallard's conclusions, particularly with regard to the *enfants trouvés* in France. His information was very different from Dr. Stallard's. In the first place, the great test was the outcome of the system, and he learned that these children figured very largely in the criminal statistics. It was very probable that there was a great deal of affection between these children and their guardians, because it was a very prevalent practice for people to contrive to get their own children boarded with them at the expense of the State

as *enfants trouvés*. With the present abuses in English cottage life, it seemed to him absurd to advocate the placing of pauper children in such homes, many of which were perfect nests of fever and other diseases. He believed also that Dr. Stallard was in error as to the health in the district schools. It was found that in the London schools they had almost banished children's diseases, with the exception of ophthalmia, and in some they had even banished that. Indeed, a friend of his had told him that if he had a sickly child he should like to send it to one of these schools, in the belief that it would get better treatment there than anywhere else. With reference to the question of emigration, it might be mentioned that at this very time, when the adult labour market was over-stocked, he believed Mr. Tufnell would corroborate his statement that there was no difficulty whatever in getting places here for the boys from these schools, even without apprenticeship fees.

The vote of thanks was then passed unanimously.

### Proceedings of Institutions.

MARLBOROUGH READING AND MUTUAL IMPROVEMENT SOCIETY.—Mr. George Grossmith recently gave a lecture at the Town-hall, in connection with the above Society. It was entitled "The World behind the Foot-lights," being a glance at life as portrayed by the heroes and heroines of the stage, and was intermixed with illustrations, consisting of recitations from "David Copperfield," "Brother Sam," "Artemus Ward," &c., concluding with the laughable narrative of "Mrs. Brown at the play."

### THE PROPOSED VIADUCT ALONG THE THAMES EMBANKMENT.

On Thursday, the 4th inst., a deputation of gentlemen connected with the Strand district waited upon Mr. Layard, First Commissioner of Works, to urge him to aid them in opposing or delaying the construction by the Board of Works of the intended viaduct at the foot of Charing-cross-bridge to the entrance of Waterloo-bridge. The deputation was introduced by Lord Elcho, M.P., who, besides expressing his concurrence in the immediate object, contended that all projects like that in question ought to be under the control of the Government Board of Works, properly constituted.

The Rev. HENRY WHITE, chaplain of the Chapel Royal, Savoy, after stating as a reason for prompt action that 21 days' notice had been recently received by some of the inhabitants that their premises will be required, urged the following objections to the projected viaduct—that it is not necessary, especially as the present approaches from the embankment to the Strand might be made sufficient for a small outlay; that the concentration of the traffic at the corner of Lancaster-place, already inconvenient, would be greatly increased; that the scheme is improvident, involving as it does a needless sacrifice of the reclaimed land, the value of which is estimated at £300,000; that such a viaduct would condemn the present streets to obscurity, and render impossible the construction of public buildings between Somerset House and Charing-cross-bridge.

Mr. JOHN JONES read a resolution passed by the district Board of Works on the previous evening, in favour of memorialising the Metropolitan Board against proceeding at present.

Mr. CLARKE (Messrs. Farebrother, Clarke, and Lye) observed that such a viaduct would for all time cut off all communication between the Strand and the Thames Embankment.

Mr. LAYARD, in reply, said he had no power in the matter, as the Metropolitan Board of Works were acting under the authority of an Act of Parliament. A more improvident Act was never passed. It was passed, he supposed, in the small hours of the night, and it actually

gave Lord Salisbury complete control over Cecil-street and Salisbury-street, empowering him to erect gates there, and thus shut off communication with the Strand. As regarded the object of the deputation, although he had no control, he must say it appeared to him monstrous that two great streets or roads should run parallel to each other for hundreds of yards, and a piece of ground, which was no doubt one of the finest sites in the metropolis, be entirely sacrificed. As regarded the supposed necessity for this viaduct, the question was, whether the traffic between the embankment and the Strand would be so large after the embankment had been completed as to require additional means of access. That question it was impossible at present to decide; and he thought the inhabitants of the metropolis and the inhabitants of the country, who naturally took a pride in the metropolis, would wish to see that magnificent site utilised, and consider it unjustifiable to construct the projected road until it was ascertained whether the traffic absolutely required it. Even if the traffic did require it, there might, perhaps, be found some means of effecting the object without taking the very best part of the reclaimed land. If they got the law courts, of which there was some probability, he hoped, upon the embankment, and if between Somerset-house and Charing-cross Railway station, which he agreed with Lord Elcho it was desirable to screen, some great public buildings were erected, there would then be one of the finest series of edifices in the world along the side of the Thames. The immediate question, however, was whether the Metropolitan Board of Works could not be induced to hold its hand for the present. All he could say was, that he should have the greatest pleasure in communicating with that board and using what personal influence he could. He did trust that, in consideration of this being a great public question, it would hold its hand for a short time, that the work in question being one for which the ratepayers would have to pay, it would feel that it was advisable to wait a little while before entering into a scheme which would spoil at once and for ever one of the finest sites in the world.

Lord Elcho thanked the right hon. gentleman for the manner in which he had received the deputation, and the interview then terminated.

At a meeting of the Metropolitan Board of Works, held on Friday, the 5th instant,

Mr. Newton called attention to the above proceedings, and referred to the statements of the Rev. H. White, to the effect that the projected viaduct was not necessary, especially as the present approaches from the Embankment to the Strand might be made sufficient for a small outlay; that the concentration of the traffic at the corner of Lancaster-place, already inconvenient, would be greatly increased; that the scheme was improvident, involving as it did a needless sacrifice of the reclaimed land, the value of which was estimated at £300,000; that such a viaduct would condemn the present streets to obscurity, and render impossible the construction of public buildings between Somerset-house and Charing-cross-bridge. He (Mr. Newton) said there was no doubt that would be so, but this Board was not responsible for it. The Bill for its construction was prepared, and introduced by the Government, the Act was passed under the auspices of the Government, and it was given to this Board to carry it out, and to use the powers which that Act conferred upon them. Mr. Newton quoted the speech of Mr. Layard, given above, and said, that so far from the Act being passed in the small hours of the night, there was a very full discussion of it before a committee of the House of Commons, numerous clauses were introduced and fully discussed, and the Bill was only passed after very mature deliberation. One of those secured the rights of the Duke of Northumberland, and under that clause the Board could not do this or that without it met with his approbation. Other clauses gave great powers and reserved the rights

of the Earl of Craven, the Duke of Norfolk, and the Marquis of Salisbury, and in the face of these clauses it was impossible for the Board to go on in any other way than the Act prescribed, and that very Act was passed by the Government of 1862, of which Mr. Layard was then a member. It was originally intended to commence this approach road at the corner of Wellington-street, and so carry it on diagonally to Hungerford-bridge; but on that occasion the Rev. Mr. White, who was one of a deputation that waited upon the Board, represented that if the plan was carried out in the way proposed it would take a portion of the burial-ground of the Savoy Chapel, and would approach the chapel too closely. From what was then stated the Board did alter their plan, and they proposed to commence the roadway at the western side of Somerset-house, and so carry it on through Lancaster-place to the Thames Embankment, and thus they endeavoured to meet the objection which Mr. White had brought before them. Such being the case, he (Mr. Newton) was much surprised to find that the Rev. Mr. White had felt it to be his duty to wait upon Mr. Layard to complain of this approach also, which had been adopted to meet his views. He also felt very much surprised that, as Mr. Layard was a member of the Government by which the Act was passed, he should have spoken so strongly on the matter. He (Mr. Newton) wanted to know what they were to do, or whether they were or were not to carry out the Act? Mr. Layard said, "It appeared to him to be monstrous that two great streets or roads should run parallel to each other for hundreds of yards, and a piece of ground which was one of the finest sites in the metropolis would be entirely sacrificed." Now, he wanted to know what the Board could do in the matter after the powers that were given to the Marquis of Salisbury, the Duke of Northumberland, and the Duke of Norfolk—powers expressly given by the Government of which Mr. Layard was a member. The Board, however, had battled against them, and endeavoured to break down restrictions given to great people that were not given to persons of less influence. The Board had been unsuccessful in their efforts, and they had been put to £300 costs in their resistance to these restrictions.

Mr. PHILLIPS said, two years ago, when Mr. White attended the Board, he said the original plan would trench upon the premises of the Royal Chapel of the Savoy, and his representation did influence the Board in adopting his suggestion to remove the roadway to a greater distance from it. At the same time he was much surprised to find Mr. Layard deprecating the work to which he was a party.

The CHAIRMAN (Sir John Thwaites) said a short time ago the Government instructed an officer to report how Savoy Chapel would be affected by the roadway, and in consequence of strong remonstrances from the Government the Board were induced to reconsider the original scheme, and it was determined that it should pass through Wellington-street and Lancaster-place to the Thames Embankment, in the way the Board was about to carry out. He regretted that Mr. Layard was not better informed as to these proceedings, and he also regretted that the deputation that had waited upon him had not applied to this Board for information, and then they would have been made acquainted with the facts. The Government had no control over this Board, although they always acted very harmoniously together; and it would have been fitting in the first instance that the deputation should have come to the Board to make their representations, and failing to obtain what they required, it would then have been time enough to have applied to the Government on the subject.

#### ÉCOLE PRATIQUE DES HAUTES ETUDES, PARIS.

The new school and the laboratories at the Sorbonne, which have been fully described in the Society's *Journal*,

were expected to be opened in the course of January. M. Milne Edwards, Dean of the Faculty of Sciences, has recently made a report, to the Academic Council of Paris, upon the progress, with one important change, made in the arrangements for the new high school and laboratories.

The faculty already is in possession of two physical laboratories, one for instruction under Professor Desains, in which candidates for the degree of Licentiate or Doctor may learn the management of instruments of precision, and exercise their faculties in the repetition of classical experiments relative to heat, light, electricity, magnetism, and acoustics. The rooms set apart for this purpose have been found in three old houses, close to the Sorbonne, and placed temporarily at the disposition of the faculty, and they will very shortly be opened four times a-week to the pupils. The second physical laboratory is for scientific investigation, and is installed in a new building erected by the municipal authorities expressly for the purpose; this is under the direction of Professor Jamin, and was opened in the middle of last summer. The large chemical laboratory, under the direction of M. Sainte Claire Deville, assisted by M. Schulzenberger, was to be opened early in the present year. The practical study of mineralogy is to be carried on in the study of M. Delafosse, once a-week at first, but afterwards twice, if necessary. There are provided two geological laboratories, both under the charge of Professor Hébert, and to be opened twice a-week. The study of botany is to be divided between the Sorbonne and the Museum of Natural History at the Jardin des Plantes; the laboratory of the faculty, directed by Professor Duchartre, to be devoted to dissection, microscopic examination and analysis.

A new arrangement has been made with respect to the study of comparative anatomy, which will be divided between the Jardin des Plantes, the Collège de France, and the Sorbonne, the dissection of animals being studied at the first of these establishments. With respect to experimental physiology, a laboratory is now being arranged by M. Claude Bernard, but on a scale much too small for the purpose, but which will doubtless soon be enlarged. Lastly, says M. Edwards, the faculty intends to complete its arrangements by the opening of a reading-room, in which the students of the new high school may consult the various scientific periodicals, and make use of the time that will necessarily elapse between the lessons; for this useful object the professors have given up their common room until a new one can be provided. It is quite evident that the Minister of Education and the learned Dean of Faculty are determined to carry out the intentions of the government with vigour, and it will be the fault of the young men themselves who are devoted to scientific pursuits if they do not make progress, not only in educational, but in original investigation. The professors are the most celebrated in France, and the means provided are such as no university in the world offers for high scientific study. It will be strange indeed if a field so well prepared, and in such good hands, should fail to be fruitful.

#### DIAMONDS AT THE CAPE COLONY.

As this subject has been recently several times referred to in the *Journal*,\* the following correspondence, taken from the "City Article" of the *Times* of Saturday, the 30th January, will be of interest to the members:—

"18, King's Arms-yard, Moorgate-street, Jan. 29.

"Sir,—As considerable diversity of opinion seems to exist as to the finding of diamonds at the Cape of Good Hope, we beg to hand you the letter of Mr. W. Chalmers, Civil Commissioner and Residential Magistrate, dated Hope Town, December 11, 1868.—We are, Sir, your obedient servants, JOSEPH MOSENTHAL and Co.

"No. 1.—Found on the farm De Kalk, division of

Hope Town; weight, 21 3-16 carats. No. 2.—Found by a Boer in the boundary of the farms Paarde Kloof and Roode Kop, division of Hope Town; weight, 813-16 carats; first water; very regular in shape. No. 3.—Found by a native along the Vaal River; weight, 4 7-16 carats; first water, but of very eccentric shape. No. 4.—Found on the farm along the Orange River named Mark's Drift; weight, 1 8-16 carats; of a greenish colour, and broken. No. 5.—Found on a piece of Government ground along the Orange River; weight, 3 4-16 carats; regular in shape, very brilliant, and resembling No. 2 in shape and brilliancy. No. 6.—Found at the same place as No. 2; weight, 3 5-16 carats; valued at £30; of first water, regular in shape; found by a Hottentot. No. 7.—Found by a Griqua near the Vaal River; weight, 15½ carats; a beautiful gem. No. 8.—Found by a Griqua along the Vaal River, near Campbell, in July, 1868; weight, 12½ carats; valued at £47; defective in shape, and part of it bad colour. No. 9.—Found by a Griqua in Waterboers' country, August, 1868; weight, 2 carats; first water; regular shape; valued at £10. No. 10.—Found by a Griqua about the junction of the Vaal and Riet rivers, September, 1868; weight, 13 carats; triangular in shape; colour like polished steel. No. 11.—Found by a Bechuana beyond the Vaal River, October, 1868; weight, 9 carats; a very brilliant diamond; very perfect in shape. No. 12.—Found by a native along the Vaal River, October, 1868; weight, 6 carats; straw-coloured; defective in shape; valued at £12. No. 13.—Found by a Griqua, October, 1868; weight, 3 carats; milky in colour; has a small hole in one of the facets. No. 14.—Brought in from the Vaal River by a trader, October, 1868; weight, 4 carats; very regular in shape; first water; has a small yellow spot on one of the facets, which gives the gem rather a yellow colour; particularly sharp pointed. No. 15.—Brought in by the same trader, October, 1868; weight, 2 carats. No. 16.—Found by a native along the Vaal River, November, 1868; weight, 2½ carats; defective in shape, discoloured, and chipped. No. 17.—Found by a Bechuana beyond the Vaal River, December, 1868; weight, 4 carats; not yet valued; a very beautiful diamond of first water; very regular in shape, and particularly clear and sharp pointed.

"No. 1.—Purchased by his Excellency the Governor for £500. No. 2.—Purchased by his Excellency the Governor for £200. No. 3.—Purchased by Mr. Crickshanks, and sent by him to his brother in London. No. 4.—In Mr. Chalmers' possession. No. 5.—In Mr. Martin Lilienfeld's possession; purchased by Mr. L. Lilienfeld from the finder; taken to England by Mr. M. Lilienfeld. No. 6.—Purchased by his Excellency the Governor for £25. No. 7.—Purchased by his Excellency the Governor for £400. No. 8.—Purchased by Mr. Chapman, and sent to England. No. 9.—Purchased by Mr. Chapman, and now in his possession. No. 10.—Purchased by Mr. Joseph, of Cape Town, for £100. No. 11.—Purchased by his Excellency the Governor, for £250. No. 12.—Returned to the finder, who refused £12 offered to him—the amount for which it was valued in Cape Town. No. 13.—Purchased by Mr. Hond. No. 14.—Forwarded by Mr. Solomon to Fort Elizabeth for exhibition and sale. No. 15.—Forwarded by Mr. Solomon to Fort Elizabeth for exhibition and sale. No. 16.—Purchased by Mr. Hond from the finder for £2. No. 17.—At present in Mr. Chalmers' possession, for transmission to Cape Town.

"This information can be relied upon as correct in every respect, as these diamonds (with only one or two exceptions) have been entrusted to me by the finders, and I have disposed of them for them, without the slightest benefit to myself. The one or two which have not been entrusted to me have, nevertheless, been seen and examined by me.

"Several others have been reported as having been found, but as I have not seen them myself, and cannot, therefore, vouch for the correctness of the statements regarding them, I shall not refer to them.

\* See last vol., pp. 849, 854, and present vol., pp. 41 and 46.



"But these seventeen will, I think, be sufficient to show that this northern part of the colony contains immense wealth in diamonds; and that it only requires that a systematic search by competent persons be made to find valuable diamond beds. These seventeen diamonds have been found by the most ignorant persons (Boers and natives)—persons who never saw a diamond before. It is, therefore, impossible to say how many, in their search, of inferior quality or duller lustre they must have passed over. I am confident that a proper search by competent persons will repay any person who may invest his money in such an undertaking.

"W. B. CHALMERS, Civil Commissioner and Resident Magistrate.

"Hope Town, December 11, 1868.

"Note.—Those found along the Orange have been found in the Hope Town division. So many having been found along the Vaal River is, I think, owing to that county being populated by natives, to whom time is no object, and who have ample time to search; while along the Orange River there are no native locations."

### THE AGRICULTURAL LABOURER.

Mr. James Sanderson, writing to the editor of the *Times*, says:—The condition of the agricultural labourer has recently been the subject of considerable discussion in your columns, and probably will attract increasing attention so long as pauperism increases.

Apart from the important questions of education, cottage accommodation, and wages, it must be admitted that the great distance between the cottage of a labourer and his work, and the prevailing mode of contract, especially in the southern counties of England, between farmers and employed married servants adversely influence the moral and social condition of the labourer.

Labourers' cottages, as a rule, are clustered together in villages in close proximity to the publichouse, and thus their occupiers are brought into contact with the temptation the beershop offers. They are, moreover, generally situated two or three miles from the labourer's work, and consequently involve the loss of much labour and time. Such a distance, indeed, between the labourer's dwelling and his work means, with respect to himself, one-fifth part of each day's work unrewarded, and with respect to his employer inadequate labour to the number of hands employed.

In the majority of the Scottish counties, as well as in the northern counties of England, there are attached to each farm, and placed near the homestead, cottages sufficient to accommodate as many labourers as the ordinary cultivation of the farm requires. The term of engagement is yearly. The wages average about £40, nearly the half of which is paid in money, and the remainder in bread food, potatoes, and either one cow's milk or the food of a cow. This system gives the farmer full command of labour, allows him to effect necessary operations at the proper time, obviates the difficulty of obtaining and the expense of paying extraneous labourers, and, whenever he requires it, irrespective of working hours, gives him the assistance of his labourers. On the part of the servant it secures constant employment, full and regular wages, notwithstanding sickness, and prevents the exhausting of physical energies by unnecessary and unrequited labour. This system, too, induces frugal habits, creates in the servant an interest in the employer's work, and tends to elevate the position of both by making one scrupulous as to the character of the other.

The labourers in the north are generally sober and industrious, regularly attend church in respectable clothing, educate their children in reading, writing, and the simple rules of arithmetic, rarely contract debts, and if one of them dies a pauper the case is exceptional.

This furnishes a striking contrast to the condition of the rural labourer in the south-western counties of England. Yet I am convinced that were the same system

adopted in the south as in the north, the disparity would soon disappear.

As the erecting of cottages would involve considerable expenditure, the change I have indicated could not be prudently carried out at once; however, if farm cottages were erected as the village cottages decay, the system adopted in the north would be gradually introduced.

Wherever it is introduced, I believe that it will conduce to the mutual advantage of employer and employed, and diminish the poor-rate, which, as now levied in several districts, threatens to restrain the mainsprings of industry, and foster the evils it seeks to cure.

### Fine Arts.

ART EXHIBITIONS IN FRANCE.—An exhibition is announced to open at Roubaix, on the 29th March, and to remain open till the end of May. The administration only accept the works of artists specially invited to contribute. The show will not be a merely local one for Roubaix; Lille and Tourcoing are close to each other, and include a wealthy population of more than three hundred thousand souls. It is proposed to hold some grand *fêtes* during the period of the exhibition, after the recent example of Lille. Large purchases will be made by the town of Roubaix for its museum as well as for lotteries in each of the three above-named towns, and the private purchases are expected to be considerable, this being the first time that such an exhibition has taken place at Roubaix. The Pau exhibition opened on the 18th January; the collection is more important than on any former occasion, the success increasing with every year. The list of well-known names in the catalogue is long, and includes many of the best artists in France, with those of fourteen ladies. The second exhibition of the Artistic Society of the Hérault is announced to open on the 1st April, and to last about a month. It is proposed to transport the pictures after they have been shown at Montpellier to the neighbouring town of Béziers, so as to give the exhibition a departmental character. The town of Montpellier still maintains its literary and artistic character; the museum is remarkably fine, and the department boasts of many able landscape and portrait painters.

EXCAVATIONS IN ROME.—The Emperor has presented to the library of the Upper Normal School of Paris a series of fine photographs, representing the highly interesting discoveries made by excavations amidst the ruins of the palace of the Cæsars in Rome.

ACADEMY OF THE FINE ARTS, PARIS.—The following list of artists for the election of a corresponding member of the Academy has been presented by the section of painting:—M. Podesti, of Rome; M. Rosalès, of Madrid; and Mr. Leighton, of London. The Academy has added the following names to the list:—M. Daeger of Düsseldorf; and Mr. Herbert, of London.

THE CENTRAL UNION OF APPLIED ART, PARIS.—The Union Centrale has just issued the prospectus of the free public courses of lectures to be held, as in former years, in the rooms of the society, in the old Place Royale. During the present month of February, M. J. Foucher will treat of "The Study of Shadows and of the effect of Light on Definite Surfaces;" Dr. Lintilhac, "On Anatomy and Physiology, as applied to Art;" M. P. Burty, "On Bernard Palissy and his Works;" M. F. Lenormand, "On the Asiatic Origin of Greek Art;" M. G. Lafenestre, "On Etruscan Art;" M. E. Chesneau, "On Japanese Art;" M. A. Rondelet, "On the Influence of Art on Consumption, and of Consumption on Art." The direction of the Union announces, in addition, that its art library and museum will be still open gratuitously to all, during the evening lectures as well as in the day time. This liberality on the part of a private association is especially praiseworthy. The Union is also seriously occupied with the arrangements



for its great exhibition of applied art and design, already announced to take place this year in the Exhibition building in the Champs Elysées.

### Manufactures.

**SMOKE PREVENTION.**—The attention called to the subject of smoke prevention by the late experiments conducted on this subject at Wigan by the South Lancashire and Cheshire coal owners, has led the Manchester Association for the Prevention of Steam Boiler Explosions to add to its staff the trained stoker who was engaged throughout the whole of the experiments just referred to, the object being that he might visit the works of the members, and assist their stokers in producing a more smokeless system of firing. He has now been engaged in this way for some months, and up to last December had visited 13 of the members' works, and operated upon 63 boilers, consuming per week 1,085 tons in the gross, and, on an average,  $17\frac{1}{4}$  tons per boiler; while the mean rate of combustion per square foot of fire grate per hour has been  $18\frac{1}{4}$  lb. Under these conditions the average result has been realised of about  $12\frac{1}{2}$  minutes of very light smoke,  $2\frac{1}{2}$  minutes of brown, and one-third of a minute of black per hour, which is certainly very much below the amount emitted from chimneys generally. The conditions under which the trials were made were not by any means the most favourable. In some cases the doors had no perforations, in many the area was too limited, while some of the fire grates were seven feet in length, which is too long. While no doubt more remains to be done to complete this movement, yet it has been seen that much can be accomplished by careful firing alone, coupled with the admission of a little air at the fire door, which shows the importance of having all fire doors fitted with suitable sliding grids on the outside, and perforated box baffle-plates on the inside.

### Commerce.

**COMMERCE BETWEEN ITALY AND GREAT BRITAIN.**—In 1867, the total value of the imports into Italy from Great Britain amounted to £4,865,552, against £6,038,305 in 1861, being a decrease of £1,172,750. The following are the values of the imports during those two years, distributed according to the maritime divisions of Italy:—

	1861.		1867.
Northern provinces.....	£2,106,727	..	£1,053,245
Island of Sardinia .....	7,653	..	14,142
Tuscany .....	1,075,669	..	929,875
Southern provinces .....	1,624,855	..	1,660,722
Sicily .....	682,418	..	706,336
Ports of Romagna, on Adriatic.....	403,790	..	264,669
Venetia .....	137,193	..	236,663
	£6,038,305		£4,865,552

The values of the principal articles imported from England were as follows:—

#### Northern Provinces, including Island of Sardinia.

	1861.		1867.
Cottons .....	£307,832	....	£251,842
Iron .....	371,464	....	212,796
Cotton yarn .....	110,159	....	191,184
Woollen stuffs .....	255,515	....	138,103
Coal .....	121,271	....	126,096
Copper.....	117,975	....	70,446
Fire-arms and ammunition	29,377	....	52,021

#### Tuscany.

	1861.		1867.
Cottons .....	£333,342	....	£331,327
Iron.....	99,408	....	40,118

	1861.		1867.
Cotton yarn .....	£111,882	....	£202,805
Woollen stuffs .....	175,317	....	132,234

#### Southern Provinces, including Sicily.

	1861.		1867.
Cottons .....	£597,410	....	£594,765
Cotton yarn .....	460,745	....	505,198
Iron .....	444,633	....	149,279
Woollen stuffs .....	224,706	....	151,604
Coal.....	71,155	....	88,451

#### Ports of Romagna, on the Adriatic.

	1861.		1867.
Cottons .....	£159,844	....	£119,373
Cotton yarn .....	48,295	....	69,697
Iron .....	62,559	....	16,075
Woollen stuffs .....	54,488	....	18,650

#### Venetia.

	1861.		1867.
Cottons .....	£13,495	....	£55,217
Seeds for oil .....	17,339	....	43,500
Coal .....	12,277	....	20,944
Shellac .....	35,114	....	18,278

The value of the exports from England of colonial produce during 1867, as compared with those during 1863:—

	1863.		1867.
Northern provinces, in- cluding Island of Sardinia	£902,672	..	£584,678
Tuscany .....	160,799	..	105,496
Southern provinces .....	280,209	..	181,104
Sicily .....	52,699	..	36,628
Ports of Romagna, on Adriatic.....	9,986	..	27,781
Venetia .....	127,242	..	77,683

Totals..... £1,533,607      £1,013,370

The total value of the exports from Italy to Great Britain during 1867 was £3,101,552, being an increase of £318,999 on those of 1863, which amounted to £2,782,553. The value of the principal articles of export were as follows:—

#### Northern Provinces, including Island of Sardinia.

	1863.		1867.
Lead ore .....	£3,842	.....	£69,140
Copper ore .....	6,549	.....	27,024
Olive oil .....	10,556	.....	20,208
Maccaroni and vermicelli	12,740	.....	13,475
Marble .....	11,467	.....	23,295
Walnut wood.....	23,907	.....	11,707

#### Tuscany.

	1863.		1867.
Olive oil .....	£191,971	....	£120,024
Boracic acid .....	74,452	....	62,103
Marble .....	61,710	....	58,620
Marble (worked) .....	19,259	....	35,271
Hemp .....	47	....	28,982

#### Southern Provinces, including Sicily.

	1863.		1867.
Sulphur .....	£275,602	....	£375,217
Olive oil .....	316,044	....	335,285
Sumach .....	125,344	....	219,819
Oranges and lemons .....	117,105	....	125,171
Cream of tartar .....	96,253	....	133,830
Wine .....	60,974	....	72,134

#### Adriatic Ports.

	1863.		1867.
Grain .....	£9,450	....	£77,995

#### Venetia.

	1863.		1867.
Raw hemp .....	£175,518	....	£243,361
Beads and glass-ware ....	115,351	....	187,528
Grain (1864) .....	1,121	....	87,014
Hemp yarn.....	14,435	....	12,856
Sumach .....	6,256	....	12,094

## Colonies.

**AUSTRALIAN TARIFFS.**—The committee of the Melbourne Chamber of Commerce recently adopted a series of resolutions, to the effect that it is desirable to have one uniform tariff throughout the Australian colonies; that in order to effect this a commercial union should be established, the custom-houses at the various ports collecting on behalf of the union treasury, and that the net aggregate revenue should be distributed amongst the various colonies, on the basis of population. In short, they propose to establish at Melbourne a commercial union similar to the German Zollverein. The *Melbourne Argus* thinks this too sweeping a change for precipitate adoption, and goes on to say:—"Some parties prefer commencing with the establishment of a free interchange of colonial productions, leaving the question of absolute free trade to the future. To the principle of absolute free trade, we do not object, for it is the basis of our border treaty with New South Wales, but there are serious difficulties in the way of extending it so as to secure the just interests of all the colonies. There is no doubt that the views of the Melbourne Chamber of Commerce will find favour among similar bodies in the other colonial capitals, and this we shall regard as a symptom of the general desire to establish more harmonious intercolonial relations than have hitherto existed."

**SUBSIDY TO THE PENINSULAR AND ORIENTAL COMPANY.**—The *Sydney Morning Herald* considers that New South Wales has gained this year (1868) at least fully the amount of the Panama subsidy in the diminished price of flour, and in this advantage all the colonies have participated, both those that have and those that have not contributed to the subsidy, except, perhaps, South Australia, which, as the great wheat exporting colony, has had the price of its staple article kept down.

## Notes.

**AQUARIUMS.**—M. Coste, the well-known oyster cultivator, made a report the other day to the Paris Academy of Sciences, on the aquariums and vivariums of Concarneau, in the Department of Finistère, in France. It is ten years since the establishment for the breeding and preservation of fish was commenced at Concarneau, and there is no other place where the inhabitants of the ocean may be studied in conditions so nearly resembling those of nature. There are six reservoirs in the open air with a surface equal to about 1,200 square-yards, and depths varying from two to four yards, and these are supplied twice a-day with fresh sea-water by means of grated flood-gates which prevent the escape of the fish. At one extremity of these reservoirs is a large building containing seventy aquariums or tanks supplied by a continual stream of sea-water containing a vast number of fish, crustacea, and mollusks, whose forms, colours, and habits may be studied without difficulty. This is truly an admirable establishment for the purpose intended, and M. Coste is justified in stating that nothing less than an arrangement of this kind is sufficient for the furtherance of abstract and practical science in connection with the creatures of the ocean.

**AGRICULTURAL EDUCATION IN AUSTRIA.**—The course of studies in the institutions for agricultural instruction in Austria varies to from two to three years. Most of these establishments have model farms, so that the students are enabled to have practical as well as theoretical instruction. The principal institutions for the teaching of the higher branches of agriculture are those of Ungarisch-Altenberg, which has a model farm of 350 acres, with orchard, gardens, cattle, and agricultural implements; at Duthany (Galicia), a model farm and chemical

laboratory is attached to the institution; at Teuhen-Liebwerd there are a model farm, botanical garden, orchard, brickyard, chemical laboratory, workshops, brewery, and manufactory of spirits and liqueurs. At Tabor there is also an agricultural and industrial institution, with model farm, which cost 51,500 francs, and 28,000 more to arrange it with machinery, implements, &c. The agricultural institutions at Kolcawka, near Prague, has a library of 16,000 volumes, botanical museum, &c. These institutions cost annually 105,145 francs; are attended by 411 students and 59 masters. These institutions receive subsidies from the provinces. There are also 17 agricultural schools, and 4 more being established; these have 79 masters, and are attended by 411 students, and cost 192,678 francs per annum. The Academy of Forestry, at Mariabrunn, costs the State 30,000 francs per annum, and is attended by 75 students and 8 professors. The administration of the great forest of Weidlingen, 3,000 acres in extent, is confided to this institution; there is also a fine botanical garden, good library, and collection of forestry appliances. The students have practical instruction by excursions in the forests of the State. Besides this important institution, there are three other schools of forestry, at Eulenberg (Moravia), Weisswasser (Bohemia), and at Hinterbühl (Lower Austria); these schools have 10 professors, and are attended by 125 students, and cost 20,400 francs per annum. Another school of forestry is about to be established at Carniola. There are six schools for fruit-culture and wine-making, and two more being established. Three schools of sericulture and agriculture. For veterinary surgery there is the Royal Veterinary Institution at Vienna, for military veterinary surgeons; it has 7 professors and 290 students, and costs 65,000 francs per annum. There are also two other veterinary schools. All the above-mentioned institutes and schools receive subsidies from the provincial grants.

**AGRICULTURAL PRIZES.**—The Minister of Agriculture, Commerce, and Public Works in France, has established a series of prizes for the encouragement of agriculture. In addition to a work of art, value £140, called the Cup of Honour, which has been given for some time, the following prizes are now offered:—1. An object of art of the value of £20, with £80 in money, to agriculturists farming their own land, either directly or through a bailiff, with a sum of £20 and medals of several kinds to the agents of such farmers. 2. An object of art of the same value as the preceding, and with a like sum of money in addition, for farmers holding more than fifty acres of land at a rental or under other arrangement, with a prize of £20 and medals for those in their employment. 3. An object of art, of the same value, for proprietors of several *metairies*, small farms worked by tenants, who, instead of rent, give the proprietor a certain portion of the produce, and £80 in money to be divided between the tenants. 4. An object of art of the value of £8, with £24 in money, to small farmers or proprietors of not more than fifty acres, and a sum of £8 and medals for those in their employ. When the cup of honour is awarded it will take the place of one or other of the works of art in the above list. These prizes will be offered in the various departments of France alternately; twelve departments are set down for the competition of the year 1870. These prizes are in addition to the medals and other recompenses given to the exhibitors at the concours regionaux.

**TECHNICAL EDUCATION AT FLORENCE.**—A school for wood-carvers, cabinet-makers, and other workers in wood, was to be opened in Florence on the 4th January, in the ex-convent of the Annunciata, which has been given by the Municipio for this purpose. The lessons will be given on Sundays and fête days, from 8 to 10 in the morning, and will be gratuitous. The teaching will consist of geometrical drawing, elements of ornament, ornamental drawing, ornamental modelling, elements of mechanics applied to working in wood, resistance of materials, elements of chemistry applied to

the painting, varnishing, and preservation of wood, elements of natural history applied to wood-carving. The school will consist of three classes. 1st, wood-carving; 2nd, cabinet-making; 3rd, carpentry. For admission to the 2nd and 3rd classes the only requirements are that the students should be above 12 years of age and should be able to read and write. An examination in the elements of ornamental drawing, and a certificate from a drawing master as to the capabilities of the student, are required for admission into the 1st class.

**GAS WORKS IN ITALY.**—At the end of 1867, the number of towns in Italy lighted by gas was 86. The annual production of gas amounted to 30,189,941 cubic metres (upwards of 1,066,016,916 cubic feet). The quantity of coke produced was 67,668 tons, and 6,968 tons of tar. The total value of these products amounted to 14,188,598 francs. Upwards of 1,177 workmen are employed in this industry, and their wages amount annually to 885,925 francs. The price of gas in the north of Italy varies in different towns from 40 to 50 centimes per cubic metre (equal to from 9s. 1d. to 11s. 4d. per thousand cubic feet). At Milan the price of gas is 45 centimes per cubic metre (10s. 2½d. per thousand). The public lighting is, however, paid by the town at 28 centimes per cubic metre (6s. 4½d. per thousand), so that a street lamp consuming 120 litres per hour costs 0.0336 of a franc per hour.

**STUDENTS' READING-ROOM AT THE BIBLIOTHÈQUE IMPERIALE, PARIS.**—This new room has now been open some time, and the experiment of establishing one room for general readers and another for serious study seems to be a success. The new reading-room, which is applied to the latter purpose, is a fine apartment, nearly square, and lighted from the roof, with seats, affording ample space for more than three hundred readers, forming, as it were, the internal court of the new library of printed books, which occupies three of its sides. The books in the library are arranged in three stories, each being provided with a balcony. The reading-room is separated from the library by means of dwarf book-cases, which contain a limited number of works of reference placed at the disposal of the readers. The librarians occupy a range of tables between the further end of the reading-room and the library, and the arrangement seems very convenient for the service. The method adopted is similar to that of the British Museum, each reader filling the particulars of the book he requires into a blank form; and, in addition to this, the attendants enter the names of the books consulted on another form, which the reader signs and delivers to an officer as he leaves the reading-room. The great want at present is that of a general catalogue; two portions of the new catalogue *raisonné* are placed in the room, containing a portion of the works on French history and medical books, but they do not go far to supply the want of the former. Classified catalogues have their special value, and are in some cases of inestimable service to students; but nothing can supply the place of an alphabetical catalogue arranged under the names of the authors. The attendance in the new room is large enough to justify the new arrangement, which is a boon to studious men.

**BOTANICAL LIBRARY.**—The widow and daughters of the late M. François Delessert have offered to present to the Institute of France the magnificent botanical library formed by the brothers Benjamin and François Delessert, on condition that it is placed in a separate apartment, with the title of the Bibliothèque Delessert. This magnificent scientific library, the finest of its kind, perhaps, in France, comprises about eight thousand volumes, and the present possessors desire to carry out the views of the collectors, and preserve it entire in the interest of science, a wish which the Academy of Sciences will doubtless be eager to carry into effect.

**CATTLE SHOW AT PARIS.**—It is officially announced that the Minister of Agriculture and Commerce has determined that various additions shall be made to the general show of animals already announced to be held

at the new general cattle market of La Villette from the 20th to the 24th of March. This, says the *Journal de l'Agriculture*, is a happy imitation of what is done at the Smithfield Club at Islington, in the month of December. The additional exhibitions will consist of live and dead poultry, grain, seeds and roots, instruments, and machines. This decision will add great interest to the competitive show.

## Correspondence.

**XYLOGRAPHY.**—SIR,—Will you permit me to thank Mr. Jackson, of the Royal Gardens, Kew, for his letter which appeared in the *Journal* last week, on the paper I had the honour to read before the members of the Society of Arts, on the 27th ultimo, and to reply to the question put to me in that letter as to whether I am "aware that in America sheets of wood are cut so thin, that the actual material itself is used in place of paper for walls." For more than twelve months I have been aware that in America wood was cut almost as thin as paper, and about nine months ago I saw a specimen of oak so cut, but practically, there are one or two objections to its successful application commercially as it appears to me, and in directing attention to these points, I wish it to be distinctly understood that I have not the least desire to underrate the merits of the discovery. The first objection is that it cannot be applied to mouldings; these, it is admitted, must be put in in solid wood; this may not be so grave a matter for new work, although it must necessarily increase the cost, but it becomes a much more serious question when applied to work that is already fixed, and has been previously painted, for in that case the moulded work must either be removed and replaced with solid wood, or grained by hand, the part where Mr. Laing, a practical grainer—at the discussion which followed the reading of my paper—stated the hand grainer most failed, and where my process was so successful. The second objection is that most of the wood cut by the American process has a grain in it, such as the oak, the walnut and others, so that when held up to the light, you can see through the pores, and when applied, as I apprehend it must be, with glue to attach it firmly to the surface of the wood, to prevent curling at the edges and blistering, the glue shows through the veins of the wood, and detracts from the cleanness and smartness of its appearance. And further, unless the pores of the wood are effectually filled and covered over, either with French polish or several coats of varnish, there is an inevitable tendency to dust and dirt settling in the grain of the wood, which renders it not very sightly. It will at once be seen that the first objection refers mainly to wood work in the interior of dwellings, and to furniture; the second applies equally to its use for that purpose, as well as for walls.—I am, &c., Wm. DEAN, Sen.

74, Park-walk, Brompton, Feb. 8.

**P.S.**—Following out the suggestion of Mr. Land, I have again visited the museum at Kew, and with your correspondent, Mr. Jackson, have re-examined the specimens there, and I am confirmed in my opinion that there are some six or seven of those beautiful foreign woods that are available for my process.

**VELOCIPEDES.**—SIR,—After reading your notice on velocipedes in France, it appears to me that this useful invention may be employed with great advantage in this country by the postal authorities. There are many rural districts where the postman has to travel long distances on foot, frequently as much as twenty miles in the day. He would be able to perform this with much greater expedition and less fatigue to himself could he use one of the new description of velocipedes. But their great value would be found in the facility they would give for the expeditious delivery of telegrams. These,

as soon as the Government acquire possession of the telegraphs, and reduce the tariff to a uniform shilling, will be largely increased in country districts.—I am, &c.,  
ALFRED S. CHURCHILL.  
16, Rutland-gate, S.W.

### MEETINGS FOR THE ENSUING WEEK.

- MON.....**Society of Arts, 8. Cantor Lecture. Mr. S. A. Hart, R.A., "On Painting."  
Society of Engineers, 7½. Mr. Thomas Buckham, "The Drainage and Water Supply of Fareham."  
R. United Service Inst., 8½. Mr. J. M. Hyde, "Deflecting Armour-plated Ships for Coast Defence."  
Entomological, 7.  
British Architects, 8.  
Medical, 8.  
Asiatic, 3.  
London Inst., 6.
- TUES ...**Civil Engineers, 8. 1. Renewed discussion on "The Mauritius Railways: Midland Line." 2. Prof. Ansted, "On the Lagoons and Marshes of certain parts of the Shores of the Mediterranean."  
Statistical, 8. Mr. Horace Mann, "On the Cost and Organisation of the Civil Service."  
Pathological, 8.  
Anthropological, 8.  
Royal Inst., 3. Mr. Westmacott, "On Fine Art."
- WED ...**Society of Arts, 8. Mr. Henry Cole, C.B., "On the Efficiency and Economy of a National Army, in connection with the Industry and Education of the People."  
R. Society of Literature, 4½.
- THUR ...**London Inst., 6.  
Royal Inst., 3. Dr. M. Foster, "On Involuntary Movements."  
Royal, 8½.  
Antiquaries, 8½.  
Linnean, 8.  
Zoological, 4.  
Chemical, 8.  
Numismatic, 7.  
Royal Society Club, 6.
- FRI .....**Geological, 1. Annual Meeting.  
Philological, 8½.  
Royal Inst., 8. Mr. Greville Williams, "On the Female Poisoners of the Sixteenth and Seventeenth Centuries."
- SAT .....**Royal Inst., 3. Prof. Odling, "Hydrogen and its Analogues."

### Patents.

*From Commissioners of Patents' Journal, February 5.*

#### GRANTS OF PROVISIONAL PROTECTION.

Annealing cans, manufacture of—203—M. Tildesley.  
Armour plates, rolling—238—J. D. Ellis.  
Ballot-voting apparatus—63—T. B. Sydesrff.  
Boat and carriage combined—3933—W. R. Lake.  
Boilers—144—J. Loader and W. H. Child.  
Boilers—191—J. W. Wilson.  
Boilers, &c.—179—F. A. Paget.  
Boots and shoes—220—B. Mountain, T. Richmond, and G. Duffield.  
Boots, &c., knives for cutting out the soles of—259—J. Silman.  
Boring apparatus—195—C. J. Chubb.  
Bricks, &c., burning—161—J. H. Johnson.  
Chairs, cages, or hoists used in mines, &c.—3015—A. Thorpe.  
China, &c., moulds for moulding—206—A. Maw.  
Cocks or valves—227—C. E. Brooman.  
Collar studs, &c.—233—R. J. Green.  
Copper, smelting—219—H. H. Murdoch.  
Diseases, apparatus for treating—3691—J. H. Johnson.  
Drilling machines—177—G. A. Crow.  
Earrings, &c.—224—C. Touchevieux.  
Envelopes—240—J. Millar.  
Envelopes, &c.—257—R. Girdwood.  
Fabrics, finishing—226—R. G. Lowndes and M. M. Callum.  
Fabrics, finishing, &c.—268—C. D. Abel.  
Fabrics, looped and knitted—204—J. Wilkins.  
Fabrics, singeing by gas flames—248—C. Mather.  
Fire-arms, &c., breech-loading—118—A. M. Clark.  
Fire bars—266—W. Brown and T. H. Garbutt.  
Fire, liquid-discharging apparatus for extinguishing—255—T. Brown.  
Furnaces—3945—E. Butterworth.  
Gas—3009—J. F. G. Kromschroeder.  
Grain and seeds, germinating—230—A. V. Newton.  
Harmoniums—185—M. J. Matthews.  
Ivory, compositions resembling—223—W. M. Welling.  
Key-hole plates, &c.—197—C. G. Gumpel.  
Letter boxes, &c.—211—W. Dennis.  
Letter-copying presses—260—G. Tangye.  
Life-boats, &c.—263—W. W. Petersen.  
Locomotives, &c.—189—C. de Bergue and C. Faure.

Looms—200—R. Baxenden and J. Heald.  
Looms—231—E. Hartley.  
Millstones, dressing—217—W. Huggins and H. Horsnail.  
Mining machines—212—W. Burgess.  
Motive-power—3677—H. W. Grylls.  
Motive-power—264—R. M. Marchant.  
Motive-power, &c.—208—T. Cook and J. Watson.  
Moulds for casting—234—J. and S. Roberts.  
Oxide of zinc, obtaining—262—A. C. Pass.  
Packing cases, &c.—120—H. L. Harris.  
Pessaries—270—R. Blackbee.  
Phosphatic manures—258—E. H. Prentice.  
Pianofortes—187—H. A. Bonneville.  
Pipes, connecting—245—H. Law.  
Plate glass, grinding—236—C. L. Wood and J. Stockley.  
Presses for stamping letters, &c.—272—L. P. Hébert & L. A. Moulin.  
Railway carriages, buffers for—213—J. Beattie.  
Railway signals—75—F. N. Gisborne and H. Allman.  
Railway trains, communication in—202—B. Craig.  
Railway trains, communication in—216—E. Simons.  
Railway trains, intercommunication on—247—C. French.  
Railways, wedges used on—256—J. H. Johnson.  
Shearing apparatus, &c.—199—W. R. Lake.  
Sheet-metal rollers—249—T. Reeder.  
Sheet metal, stamping and forming articles of—228—W. E. Newton.  
Ships, &c., propelling—251—J. Taylor.  
Slate-cutting machines, &c.—210—W. E. Gedge.  
Smoke and soot, treating—252—T. Vaughan and J. W. Smith.  
Spinning and twisting machinery—221—J. Dinsdale.  
Steam boilers—209—J. W. and J. W. Horsfield.  
Steam engines—196—T. C. Lewis.  
Steam engines—215—J. Orton.  
Stone, &c., quarrying and sawing—214—J. Millward.  
Straw, machinery for shaking—241—J. Wilson.  
Sugar—246—C. Gil.  
Taps—183—E. Barcroft.  
Tobacco—254—J. Porteous and H. Gibson.  
Types and dyes—24—L. Hannart.  
Varnish—3837—G. Hadfield.  
Veneers, cutting—244—A. V. Newton.  
Venetian blinds—229—J. Carr.  
Ventilating apparatus—243—W. R. Lake.  
Veterinary purposes, apparatus for throwing cattle for—201—A. B. Cunningham.  
Wearing apparel—34—D. Nicoll.  
Wheat flour, manufacturing—232—H. D. Bowyer.  
Window sashes, &c., fixing—237—E. D. Ruston and W. W. Mills.  
Wool, &c., preparing, &c.—239—J. Wilson, J. Wilson, jun., and G. Cryer.  
Wool, &c., spinning, &c.—205—J. Speight, J. E. Burton & E. Brooke.  
Works of art, &c., obtaining in metals or alloys fac-similes of—149—L. B. Phillips.  
Yarns, steaming printed—218—L. J. Crossley and R. Hanson.

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*From Commissioners of Patents' Journal, February 9.*

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	3619. W. E. Newton.
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